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NINETEENTH BIENNIAL REPORT

OF THE

Oregon State Highway Commission

1949 — 1950

NINETEENTH BIENNIAL REPORT

OF THE

Oregon State Highway Commission

For the Period July 1, 1948, to June 30, 1950

OREGON STATE HIGHWAY COMMISSION

BEN R. CHANDLER, Chairman
CHAS. H. REYNOLDS, Commissioner
M. K. McIVER, Commissioner

R. H. BALDOCK, State Highway Engineer
J. M. DEVERS, Chief Counsel
H. B. GLAISYER, Secretary

STATE PRINTING DEPT.

OREGON STATE HIGHWAY COMMISSION

Former Members and Terms

E. J. Adams, Eugene, February 28, 1917, to March 31, 1918.
W. L. Thompson, Pendleton, February 28, 1917, to Oct. 15, 1919.
S. Benson, Portland, February 28, 1917, to November 15, 1920.
R. A. Booth, Eugene, April 1, 1918, to May 28, 1923.
J. N. Burgess, Pendleton, October 16, 1919 to November 21, 1919.
E. E. Kiddle, Island City, November 26, 1919, to Dec. 28, 1920.
J. B. Yeon, Portland, November 22, 1920, to March 31, 1923.
W. B. Barratt, Heppner, January 8, 1921, to March 27, 1923.
Wm. Duby, Baker, March 27, 1923, to July 31, 1927.
H. B. Van Duzer, Portland, April 1, 1923, to October 7, 1931.
W. H. Malone, Corvallis, May 28, 1923, to March 31, 1927.
C. E. Gates, Medford, April 1, 1927, to March 11, 1931.
Robert W. Sawyer, Bend, August 1, 1927, to May 28, 1930.
M. A. Lynch, Redmond, May 29, 1930, to August 1, 1931.
Chas. K. Spaulding, Salem, March 11, 1931, to February 16, 1932.
Wm. Hanley, Burns, August 1, 1931, to February 16, 1932.
J. C. Ainsworth, Portland, October 8, 1931, to February 16, 1932.
Leslie M. Scott, Portland, February 17, 1932, to March 31, 1935.
Carl G. Washburne, Eugene, Feb. 17, 1932, to October 9, 1935.
E. B. Aldrich, Pendleton, February 17, 1932, to March 31, 1940.
F. L. Tou Velle, Jacksonville, October 9, 1935, to March 31, 1939.
Henry F. Cabell, Portland, April 1, 1935, to February 28, 1943.
Huron W. Clough, Canyonville, April 1, 1939, to April 7, 1943.
Herman Oliver, John Day, April 1, 1940, to March 31, 1943.
Merle R. Chessman, Astoria, April 8, 1943, to October 1, 1946.
T. H. Banfield, Portland, February 28, 1943, to March 31, 1950.
Arthur W. Schaupp, Klamath Falls, Apr. 1, 1943, to Mar. 31, 1949.

Present Members

Ben R. Chandler, Coos Bay, appointed October 1, 1946.
Chas. H. Reynolds, La Grande, appointed April 1, 1949.
M. K. McIver, Portland, appointed April 1, 1950.

< *View from Neakahnie Mountain, U. S. 101, Tillamook County.*

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LETTER OF TRANSMITTAL

Salem, Oregon
January 1, 1951

HONORABLE DOUGLAS McKAY,
Governor of the State of Oregon.

Dear Sir:

In compliance with the provisions of section 100-115, O. C. L. A., we have the honor of presenting to you the report of the Oregon State Highway Commission for the period from July 1, 1948, to June 30, 1950.

Respectfully yours,

OREGON STATE HIGHWAY
COMMISSION,

BEN R. CHANDLER, Chairman,
CHAS. H. REYNOLDS, Commissioner,
M. K. McIVER, Commissioner.

BIENNIAL REPORT

OF THE

Oregon State Highway Commission

Fiscal Years 1949 and 1950

Section One

GENERAL COMMENTS

Construction Needs of State Highways

The construction needs of the State Highway System as determined for the "Legislative Interim Committee for the Study of Highway, Road and Street Needs, Revenue and Taxation" by the "Automotive Safety Foundation" was, as of January 1, 1949, $468,839,000. Of this $468,839,000, the sum of $133,884,000 was the estimate for "immediate needs" (intolerable needs which should be remedied at once) and $334,955,000 was the estimate for "future needs" (the less urgent needs which should be remedied to meet traffic demands of the next ten years).

These estimates were acceptable to the Highway Commission as of the time of their preparation, but are in need of some revision to bring them into line with changed conditions, changed traffic requirements and other developments of the past two years and to take into consideration improvements made subsequently. Estimates as of January 1, 1951, recognized by the Highway Commission, are as follows:

Immediate Construction Needs	$152,566,000
Future Construction Needs	281,651,000
Total Construction Needs	$434,217,000

The studies of the Interim Committee have led that committee to fix 15 years as the optimum and feasible time within which the total construction needs of the State should be met. The Highway Commission agrees that 15 years is both as long a time and as short a time as the economy of the State on the one hand and the State's ability to provide needed finances on the other hand will permit. To satisfy the totals needs in that length of time will require an annual construction program averaging $28,948,000. With due allowance being made for normal annual increases in the State's highway income, that average can be met with a beginning annual program of $26,350,000.

Of this beginning annual program of $26,350,000, it is hoped that $2,000,000 will be taken care of by the Federal Government through its Forest Highway Program. By this, the annual construction need to be satisfied from State funds and Federal aid funds would be reduced to $24,350,000.

Funds Available For Highways

Following recommendations made by its Interim Committee for the Study of Highway, Road and Street Needs, Revenue and Taxation, the legislature, at its 1949 session, took steps to increase the incomes available for highways, county roads and city streets by increasing the gasoline tax from 5¢ per gallon to 6¢ per gallon and the registration fee for automobiles from $5 to $10. On the basis of 1949 gasoline consumption and automobile registrations, these increases amount to $4,150,000 and $2,850,000, respectively. For the year 1951, these increases are expected to amount to $4,550,000 and $3,175,000, respectively.

At the 1949 session of the legislature, changes were made in the State's Motor Transportation Act which changes are expected to yield, in 1951, a total increase in commercial truck revenues (PUC fees and registration fees) approximating $1,500,000.

The combined total of the increases authorized by the 1949 legislature is approximately 12 per cent or $1,000,000 per year greater than originally estimated.

The above increases in revenues, acting together with somewhat larger than normal annual increases in the same revenues, have operated to increase the total income from state motor vehicle taxes and fees from $28,649,924 in 1948 to an estimated $41,500,000 in 1951.

Under the laws governing the distribution of motor vehicle income, the estimated total 1951 income of $41,500,000 will be distributed among the counties, the cities, the State Police and the State Highway Commission as follows:

Counties (19%)	$ 7,900,000
Cities (10%)	4,150,000
State Police	1,000,000
State Highway Commission	28,450,000
	$41,500,000

Of the $28,450,000 of motor vehicle revenue available to the State Highway Commission annually, $17,950,000 is required for current expenses other than highway construction, these current expenses and their respective costs being as follows:

Highway maintenance	$11,100,000
Operating expenses (including park operation)	1,800,000
Administration	1,400,000
Buildings, parks and equipment	1,800,000
Debt service	350,000
Surveys	750,000
Minor highway betterments	750,000
	$17,950,000

With $17,950,000 allotted to these current expense items, only $10,500,000 of motor vehicle income remains to be used in highway construction and the purchase of rights of way.

Adding to the $10,500,000 of motor vehicle income available for highway construction and rights of way some $7,000,000 of federal aid annually available for construction on state highways brings to $17,500,000 the total amount that is available to the Highway Commission, annually, for construction and rights of way on the State Highway System.

Additional Funds Required to Meet Needs

In the foregoing discussions, there are developed the facts (1) that the annual construction need of the State Highway System, after deduction of forest highway needs expected to be met by the Federal Government, is $24,350,000 and (2) that the funds annually available to the Highway Commission for construction and rights of way on the State Highway System is $17,500,000.

Whether the above-indicated deficiency is to be made up by the provision of additional income or additional funds, or whether the State is to continue to carry on with a system of State Highways which is definitely inadequate to meet its transportation needs, is a decision to be made by the legislature. As an avenue along which to proceed in the provision of additional funds, the Highway Commission suggests and recommends the issuance of bonds. With present low interest rate possibilities, the Highway Commission is of the opinion that the benefits which can be brought to the people of the State by the issuance of bonds and the investment of the returns in improved highways will be many times the interest costs;

Forest Highway construction on U. S. 395 near Silvies in Grant County.

also, the Commission is firmly of the opinion that the imposition of a part of the cost of improvements which can be made possible by the issuance of bonds upon the people of future years by whom the improvements are to be used is wholly equitable and in line with good business practice.

If the State should so desire, it may use federal aid funds of future years in the payment of annual maturities on the bonds it may issue. Provision for such use was made in the Federal Aid Act of 1950 and, in Oregon, the portion of each annual maturity payment the Federal Government will make may be as high as sixty per cent. The conditions to be met in such utilization of federal aid are (1) that federal aid will be allowed only on bonds the returns for which are expended on projects on the federal aid highway system for which plans and specifications have had prior approval by the Bureau of Public Roads, and (2) that federal aid on bond maturities will be limited to and will be paid from the State's pro rata share of such federal aid for highways as may, at the time of payment, be available.

The issuance of bonds to the extent of seventy or seventy-five millions of dollars during the coming five to eight years would meet the immediate needs of the State Highway System and would go far in the removal of major deficiencies. It is possible that the increased traffic, which the improvements made with the bonds would generate, would yield income sufficient to not only pay the interest on the bonds but to pay the principal as well.

Progress Made on Second Postwar Federal Aid Program

Under a Federal Aid Act passed by Congress in 1948, authorization was given for federal aid to highways in the amount of $450,000,000 for each of the two fiscal years 1950 and 1951. Of this amount, Oregon's annual share was $6,319,000, comprising $3,328,000 for Federal Aid Primary Highways, $2,271,000 for Federal Aid Secondary Highways and $720,000 for Federal Aid Primary Highways in urban areas. As a condition to obtaining these federal monies, the State is required to provide match money on a basis approximating 40 per cent of state money to 60 per cent of federal money. The combination of federal and state money amounted to $10,600,000 per year or $21,200,000 for the three-year period.

Of the $21,200,000 total, $3,000,000 was used to bring to completion the first post war program, which program was overrun in that amount due to the inflationary conditions which obtained during the period that that program was being contracted. Contracting of the $18,200,000 remaining available for the 1950-1951 period began in June, 1949. As of November 30, 1950, 75 per cent of the program is completed or under contract and by March, 1951, the whole of the program will have been contracted. The permissible time limit for the contracting of this program as fixed in the federal aid act is June 30, 1953. Reports indicate that, among all the states, Oregon stands fifth in percentage of available federal aid funds under contract.

TABLE I

Estimate of Oregon's Allotment of Funds Under Federal-Aid Highway Act of 1950

(Amounts given are the amounts for each of the fiscal years 1952 and 1953)

Class of Project	Total All States	Oregon's Share Federal Funds	State Match Money			Total Federal Plus State Funds
			Net Cooperation (37.94%)	Extra for Non-participating Items	Total State Funds	
Federal-aid Primary Highways	$225,000,000	$3,930,000	$2,400,000	$ 220,000	$2,620,000	$ 6,550,000
Federal-aid Secondary Highways	150,000,000	2,715,000	1,670,000	115,000	1,785,000	4,500,000
Federal-aid Urban Highways	125,000,000	1,115,000	680,000	55,000	735,000	1,850,000
Totals	$500,000,000	$7,760,000	$4,750,000	$ 390,000	$5,140,000	$12,900,000

Third Postwar Federal Aid Program

By an act known as the "Federal Aid Highway Act of 1950" passed by Congress in September, 1950, federal aid for highways has been authorized in the amount of $500,000,000 for each of the two federal fiscal years 1952 and 1953. Oregon will share in these federal funds in an amount estimated at $7,760,000 per year. Of this amount, a part is allotted for use on primary federal aid highways, another part is allotted for use on secondary federal aid highways and a third part is allotted for use on primary federal aid highways within urban areas. Exact amounts of the allotments to the different classes of highways are not available as of the time of issuance of this report, but estimated amounts, together with estimated amounts of state funds required as match money are shown in accompanying Table I.

The construction program on which these federal and state funds will be used is to be called the "third postwar federal aid program." Its total will be $25,800,000 broken down approximately as follows:

Primary highway projects	$13,100,000
Secondary highway projects	9,000,000
Urban highway projects	3,700,000
	$25,800,000

Studies from which to develop the new program are now in progress and contracting of the projects will begin shortly after the beginning of the year (1951).

Federal Funds for Forest Highways

In the Federal Aid Highway Act of 1950, authorizations of $20,000,000 were made for Forest Highways for each of the federal fiscal years 1952 and 1953. Of these authorizations, the amounts to be expended in Oregon are approximately $2,750,000 per year or $5,500,000 for the two-year period covered.

Under programs of previous years, there remain to be contracted four projects, having a total estimated cost of $1,725,000.

Forest highway funds are expended on contracts awarded by the U. S. Bureau of Public Roads. Projects are principally on state highways within or near national forests.

Architect's drawing of New State Highway Office Building

Highway Office Building

To overcome the inconvenience of having its headquarters office organization scattered over the city of Salem in several widely separated buildings, the Highway Commission, under authority given it by the State Legislature, has undertaken the construction of an office building. This building, to be known as the Highway Building, is to be a part of the Capitol Group being located in the block immediately north of the block occupied by the recently constructed Public Service Building.

Plans for the Highway Building were prepared by architects Whitehouse, Church, Newberry & Roehr of Portland, and contract for its construction was awarded to the Sound Construction Company of Seattle on November 8, 1949. The building is to be five stories in height, with a net usable floor area of 101,140 square feet. The exterior finish is to be of Vermont marble (white). The completed cost, including cost of site, is expected to be $2,050,000. Occupancy of the building is scheduled for April, 1951.

The Problem of Overloaded Trucks

In the Seventeenth Biennial Report of the Oregon State Highway Commission to the Governor and the legislature, the Highway Commission commented on the truck problem and on log truck traffic. Since that time, the use of the highways by heavy motor transport has increased tremendously, particularly by those combinations in the heavier weight groups. Permissible weights have been increased until the laws provide for the maximum weights which the highways can withstand without sustaining serious damage. The added presence of overloads creates a grave problem wherein the public investment in the highway plant is jeopardized and the economy of the State faces irreparable loss unless positive action is taken and stringent measures are applied to control the situation.

The unprecedented demand for lumber and forest products during the past two years and the record high prices being paid for lumber and logs have caused a marked increase in overloaded trucks transporting logs and lumber. Many of the operators, in their effort to take advantage of this period of high prices, have endeavored to haul as many logs as they could without regard to the damage either to the highways or to their equipment.

Moreover, in many areas of the state, the policy of the local justice courts is to assess only nominal fines, and these nominal fines are, therefore, added to the cost of doing business and the profits from the overloads far exceed the fines.

A recent court decision which will increase the permissible weight on tandem-axle trailers engaged in hauling logs from 32,000 pounds to 35,600 pounds will cause further overstresses of highway pavements and structures.

The Commission respectfully recommends to the legislature a thorough overhauling of all size and weight laws so as to clarify the meaning and bring the limitations within limits which are necessary to protect the safety of the motorist and to prevent overstressing of highway pavements and structures.

The practice of overloading is by no means confined only to logging and lumbering trucks but is, likewise, practiced by trucks loaded with other commodities. Attention of the public throughout the nation has been directed by various writers to the highway damage caused by overloaded trucks. Perhaps it is more manifest in this state than in others due to the large amount of logs and lumber hauled.

Some of the haulers, realizing the importance of preserving the highways so that they may continue to carry on their business, have installed self-policing actions which have materially reduced the practice of overloading. Credit should be given to the Oregon Motor Transport Association, an organization comprising 75 or 80 of the principal freight and petroleum hauling operators in Oregon, for an active campaign within its membership to reduce overloading. This campaign, adequately publicized, should have a beneficial effect upon other haulers by showing the public that conscientious haulers can control overloading.

A number of conscientious and responsible lumber operators, most of whom are associated with the Pacific Logging Congress, the Associated Forest Industries of Oregon, or the Western Forest Industries Association, who realize that continued prosperity of the log-hauling industry depends upon preservation of the state highway system, have taken steps to reduce overloading to a minimum. Some operators have accomplished splendid results by employing careful practices and by exercising constant supervision of their truck drivers and loaders. A number of these operators have records of violation far below the state-wide average, while one operator has a record of hauling 1,671 loads in 22 months without a single violation.

When the legislature reviews the matter of sizes and weights of vehicles, it is suggested that a mandatory scale of fines be fixed for violations of permissible weights so that profit cannot be realized from intentional overloading. It is also suggested that the State Highway Department weighmasters be given authority to require unloading of excess weight so as to prevent further damage to the highways. Experience in other states has indicated that this is a positive method of stopping the practice of overloading.

Modernized section of Pacific Highway near Glendale Junction, Douglas County.

Section Two

REPORT

OF THE

State Highway Engineer

TO THE

State Highway Commission

OF THE

STATE OF OREGON

1949-1950

R. H. BALDOCK, State Highway Engineer

LETTER OF TRANSMITTAL

Salem, Oregon
January 1, 1951

To the Honorable State Highway Commission,
Ben R. Chandler, Chairman,
Chas. H. Reynolds, Commissioner,
M. K. McIver, Commissioner.

Gentlemen:

I have the honor to submit to you herewith the report of the State Highway Engineer for the period July 1, 1948, to June 30, 1950.

Respectfully yours,

R. H. BALDOCK,
State Highway Engineer.

Section Two

REPORT OF THE
STATE HIGHWAY ENGINEER
TO THE
STATE HIGHWAY COMMISSION
1949-1950

INTRODUCTION

In this section of the report are given, first, an outline of the progress made in highway improvement during the biennium; second, descriptions of the several classes and systems of the highways with which the Department has to deal; third, a discussion of the department's finances, its sources of income, the amounts of its income and the amounts of its expenditures; and fourth, reports by some of the subdivisions of the department's organization on the activities of those subdivisions. The subjects mentioned will be found under subheads as follows:

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Elgin-Boswell Ranch Project on the Wallowa Lake Highway, Union County.

PROGRESS IN HIGHWAY IMPROVEMENT

This article deals with the progress made during the years 1949 and 1950 in the improving of the State's highways and in the elimination of the deficiencies therein. Under the term "highway improvement," a variety of activities is involved, including the relocating of highways to provide shorter distance and better alignment and grade, the increasing of widths of traveled way, the increasing of strengths of surfacing, the widening and strengthening of bridges, the eliminating of grade crossings, et cetera. These activities serve to increase the riding comfort and safety of the highways, save travel time, reduce vehicular operating costs, enhance the pleasures of motoring, reduce the cost of highway maintenance, enable the highways to carry heavy loads without damage, and generally augment the value of the highways to the citizenry.

During 1949 and 1950 there have been completed 139 road construction projects and 63 major bridge or grade separation projects. These projects were distributed over 31 state primary highways, 27 state secondary highways, 10 county roads on the federal secondary highway system and some 30 or more city streets not on state highway routes. As a result of the completion of these projects, the percentage of mileage on the two state systems which has been brought to the status of an oiled or higher type riding surface has been increased as follows:

	Primary Highways	Secondary Highways
As of December 31, 1948	93%	65%
As of December 31, 1950	95%	71%

The mileage of the various kinds of work performed under these 139 road construction projects completed during 1949 and 1950 total 1,155 miles and were as shown in Table II.

As of December 31, 1950, the status of improvement of the two state highway systems which are under the jurisdiction of the State Highway Department is as indicated in Table III.

The status of improvement of each of the 56 state primary highways, of each of the 123 state secondary highways and of roads and streets other than those on the two state highway systems is shown in detail in Section Three of this report.

TABLE II

Mileage of Work Performed in 1949

Classification of Work	Primary Highways (Miles)	Secondary Highways (Miles)	Other Roads and Streets (Miles)
Concrete paving	4.6	....	0.1
Bituminous paving	68.5	15.4	8.6
Bituminous macadam surfacing	66.6	15.6	1.3
Oil mat surfacing	116.9	117.7	65.9
Rock and gravel surfacing	204.1	140.8	71.2
Grading	126.1	90.6	41.0
Bridges (number of)	51	3	9

TABLE III

Status of Improvement of Highway Systems

Type of Improvement	Primary Highways (Miles)	Secondary Highways (Miles)
Concrete pavement	309.65	45.88
Bituminous pavement	571.10	206.94
Bituminous macadam surface	1,304.78	85.74
Oil mat surface	2,400.51	1,438.35
Rock or gravel surface	131.83	413.33
Graded only	14.17	129.82
Unimproved	72.84	188.06
Totals	4,804.88	2,508.12

The problem of maintaining and improving any large system of highways is complex, and places many demands on the revenues available for the task. It must be appreciated that Oregon's major trunk highways were in most part built 20 to 30 years ago under economic circumstances far removed from those of the present day. The increased traffic volumes and heavier loads which have developed during those years require heavier, wider and consequently more expensive road construction. Thus, improvements in Oregon's highways do now, and must in the future, consist principally of the replacement of existing highways with new roadways constructed with wider traveled-ways and shoulders, and with heavier types and thicknesses of surfaces and bases. These new road ways must be built with easy curvature and light grades. True progress in highway improvement cannot in this state be measured in miles of roads built, nor necessarily in percentages of riding surface of a type that permits year-round use of the road. The measure of improvement is the progress made in renovating or rebuilding our present roads to standards required by the traffic which they are now, and will in the future, be called upon to carry.

A brief review of the major projects completed during 1949 and 1950, arranged by highways, is given below. This account is rendered as a matter of record and to indicate the extent and nature of the construction work which is typical of that required at ever increasing tempo on practically every route on two highway systems.

Primary State Highways

On the primary state highway system, comprising 56 routes, projects were completed on 31 of them, and involved an expenditure of $27,109,494 during the biennium. Brief descriptions of the major projects follow:

Pacific Highway West, U.S. No. 99W: The biennium has witnessed the undertaking and partial completion of a major highway development in Portland on this route, extending from N. Tillamook Street to the East end of the Steel bridge on the east side of the Willamette River, and from the west end of that bridge to a connection with the recently constructed Harbor Drive expressway near Ankeny Street on the west side. The prime purpose of the construction is to provide a 4-lane divided roadway for main highway traffic through the congested areas of the city without jeopardy to the convenience and expeditious handling of the heavy local traffic which, through necessity, must use the same thoroughfares. Accomplishment of this objective is to be attained by the construction of grade separation structures, pedestrian subways, separated ramps and approaches and extensive lighting and traffic control devices; all planned and designed in accordance with nationally recognized modern standards of construction and in conformance with the directional flow of traffic on joining and adjacent city streets.

In general, the main travel surfaces are of 8-inch Portland cement concrete pavement, with asphaltic concrete pavement surfaces of contrasting color being used on entrance and exit lanes and incidental service roads, ramps and approaches. The structural work includes the reconstruction and widening of the east end of the Broadway bridge; the widening of the east end of the Steel bridge, the construction of a new 3-level separation and approach at the west end of the Steel bridge, and the building of partial viaducts, retaining walls and pedestrian ways. Comprehensive in its scope, the project as a whole will materially expedite the handling of peak-hour local traffic across the two river crossings and at the same time permit through traffic on the main highway route to pass safely and comfortably through the metropolitan area. Completion of the project is expected in the early summer of 1951 and will represent an expenditure of approximately $3,155,000 for its construction.

Between Newberg and McMinnville, three sections of old 16-foot black top pavement have been brought to modern standards commensurate with traffic need. The new construc-

Safety islands, signs, lights, etc. on U. S. 99W at Dayton Junction, Yamhill County.

tion consisted of 5.2 miles of 5-inch asphaltic concrete pavement with a 24-foot minimum width founded on rock base from 8 to 12 inches in thickness and flanked with 8-foot shoulders. Two of the sections, lying northerly and southerly of Dundee were new construction lying 42 feet to the northwest of the old pavement to thus be in proper position for the development of a 4-lane divided highway by the widening and resurfacing of the old pavement. From the West Dayton junction westerly to Lafayette, the new construction was of similar nature on new and improved alignment lying to the south of the old highway. At West Dayton junction, where U. S. No. 99W is met by the Salem-Dayton Secondary Highway (State No. 150), traffic use has been provided for and directed by multiple lane pavements of contrasting colors, refuge lanes for turning movements, island separators for guidance, overhead illumination for safety, and the use of grassed areas, acceleration and deceleration lanes, lighted signs, and other safety features which experience has shown to be desirable and nesessary at highway junctions.

At Amity, the existing 18-foot black top pavement was resurfaced and widened to 24-foot width with a 5-inch lift of asphaltic concrete for a 1,000-foot length at the north entrance, and a 260-foot section at the south entrance was resurfaced and widened to 36-foot width with like material to provide for local parking outside of highway traffic lanes. Pedestrian walks of asphaltic concrete were provided on each side of the highway on the northerly unit of improvement.

Expenditures during the biennium for construction work on the Pacific Highway West (U.S. 99W) amounted to $2,962,499.

Pacific Highway East, U.S. No. 99E: On this route, the Department is constructing the South Unit of the Denver Avenue-Columbia Slough Section on N. E. Union Avenue near Portland. This project, 0.5 mile in length, involves not only the widening of Union Avenue to a width of 72 feet for 4-lane divided traffic flow, but includes the construction of two grade separation structures and nearly two miles of additional service roads, ramps and road connections. Plant-mix asphaltic concrete is being used in the paving work, five inches thick on the main route and three inches thick elsewhere. By means of the grade separation, structures, ramps, connections, et cetera, provision has been made for traffic on Vancouver Avenue, Gertz Road, in the vicinity of the race tracks and at other local service areas without interruption or hazard to the free flow of traffic on the main highway route. Similar widening and improvement is planned for the remainder of N. E. Union Avenue from Denver Avenue to Columbia Boulevard as funds will permit.

Pacific Highway, U.S. No. 99: Three projects have been completed during 1949 and 1950 on this route which extends from Junction City to the California state line south of Ashland.

At Eugene, the 1.51-mile High Street-Walnut Street unit of the new location through the city has been constructed and placed in service. In general, the project provides a 4-lane divided roadway for through traffic, extra widths at intersections for turning movements, channelization of traffic at the Broadway and Mill Street junction, a traffic circle to serve University of Oregon traffic on Eleventh Avenue and incidental curb and island construction, signing and lighting to facilitate and speed up the flow of both local and through traffic. The pavement is a 5-inch thickness of asphaltic concrete placed on a 10½-inch rock base. Tying in on the northwest end with 6th and 7th Streets and on the southeast with a previously completed contract, the project eliminates the last unit of narrow and congested highway in the city and provides a continuous improved 4-lane route from the north limits, through the city, to the Glenwood junction with the McKenzie Highway near Springfield.

The northerly 3.63-mile unit of the Goshen-Creswell Section has been improved by the widening and resurfacing of the old Portland cement concrete pavement with new plant-mix asphaltic concrete to a width of 24 feet. One mile of the construction was on new line and grade to eliminate hazardous curvature and to improve sight distance.

The North Dillard Bridge over the South Umpqua River is nearing completion as this report is written, as is also the 0.57

mile of grading and paving involved in the construction of the relocated highway approaches thereto. Completion is expected in the early part of 1951.

As this report is written, two Forest Road projects under the supervision of the U. S. Bureau of Public Roads are underway between Canyonville and Johns whereby the highway is being relocated on new line and grade for 8.9 miles to connect on the south with the recently modernized highway route. Also, under a contract awarded by the Highway Commission, work is underway at Canyonville to extend this modernization program through the city and to provide by grade separation structures, ramps and channelization for the safety and convenience of through and local traffic in that vicinity.

At the junction of the Redwood Highway just south of Grants Pass, the Pacific Highway has been widened to 48 feet with asphaltic concrete, and new curbs and islands constructed to alleviate congestion and to speed up the safe movement of through traffic. The project also involved the construction of concrete curb and paved driveways at controlled points to more safely handle local traffic generated in the vicinity of a large commercial establishment at the junction.

Expenditures on highway U. S. 99 for construction purposes during the biennium totaled $2,855,533.

Columbia River Highway, U. S. Nos. 30 and 730: This highway, extending from Astoria to the Washington state line 21 miles northeast of Umatilla, has experienced considerable construction activity during 1949 and 1950, there having been 11 projects brought to completion during that period.

At Scappoose, the 0.57-mile section of highway through the city was widened with a 5-inch lift of asphaltic concrete pavement to provide two 32-foot widths of pavement for through traffic and parallel parking, additional widths for left-turn refuge lanes, curb construction for center islands and side drainage control, and incidental lighting and signing. This construction has materially alleviated the local congestion and through traffic hazards heretofore existing.

The southerly 3.69 miles of the section between Rainier and Goble has been improved with the completion of a new modern highway built on new line and grade and joining with a previous improvement at Rainier. The construction consisted of a 22-foot bituminous macadam surfacing on an 18-inch thickness of rock base. In eliminating the sharp curvature and adverse grades of the old highway, the making of center line cuts and fills up to 80 feet in height were necessary, involving about 400,000 cubic yards of excavation.

On Sandy Boulevard in Portland, between 44th Avenue and 74th Avenue, the existing street has been resurfaced for 1.73 miles with a special fine mix of asphaltic concrete to provide a safe non-skid texture to the surface and to improve its riding qualities.

The 2-year period has witnessed the completion of the new water-grade route of the highway from Sundial to Bonneville, involving 1.58 miles of asphaltic concrete paving, 22.75 miles of bituminous macadam surfacing, the Sundial railroad grade separation structure, and new bridges over McCord, Moffett and Tanner creeks. This work was accomplished in 1949 and 1950 under the Sundial, Troutdale, Troutdale-Dodson and Dodson-Bonneville road contracts and three separate bridge con-

New alignment on the Columbia River Highway near Quinton in Gilliam County.

tracts. The roadway surface is 24 feet in width, the westerly 1.58 miles being of 5-inch asphaltic concrete pavement, while east of the new Sandy River bridge, it is of 3-inch bituminous macadam. From Sundial to Wahkeena Creek, the roadbed was graded and topped in preceding years; while the Dodson railroad grade separation structure, and the grading, rock base and oil prime coat from Wahkeena Creek to Dodson was completed as a Forest Road project under supervision of the U. S. Bureau of Public Roads during the period covered by this report. At Multnomah Falls, the new highway was divided into direction lanes with an extensive parking area provided. Access to the Falls is by means of a new concrete pedestrian subway under the railroad, and surfaced footpaths. The new route from Sundial to Bonneville effects a saving in travel distance of 3.4 miles and materially reduces operating costs to every highway user. The alignment of the new route is outstanding for its freedom from sharp curves and thus contributes to the safety and pleasure of the people who travel it.

About five miles east of The Dalles, the Big Eddy-Dune section, 2.22 miles in length, has been reconstructed on new and improved line and grade to provide a 3-inch lift of 24-foot bituminous macadam surface with 10-foot shoulders. The new section lies above flood waters of the Columbia River and reduces curvature and adverse grades to the benefit of those who travel this route.

Between the John Day River and Quinton, two contiguous highway reconstruction projects totaling 9.75 miles in length have been completed. The two projects involved regrading on improved line and grade, 8-inch rock base and a 3-inch lift of 22-foot bituminous macadam surface with 8-foot shoulders constructed to modern standards, thus providing faster and safer transport.

At Umatilla, the bridge over the Umatilla River has been widened, and from there easterly the highway has been widened for 0.92 mile to provide a 60-foot width of oil mat wearing surface between new curbs, serving four lanes of traffic with parking areas on each side of the newly created street surface.

Expenditures for construction purposes on this route during the biennium amounted to $4,755,226.

Oswego Highway, Oregon No. 43: At Oswego, between "C" Avenue and Oswego Lake, the existing pavement has been widened with a 4-inch lift of asphaltic concrete and new concrete curbs constructed to provide a city street section 60 feet in width. This improvement furnishes a 4-lane thoroughfare for traffic with parallel parking on either side, and materially lessens traffic congestion and hazard. This project involved the expenditure of $52,300.

The Dalles-California Highway, Oregon No. 23 and U. S. No. 97: Two small projects have been completed on this route during the two-year period. The Cow Canyon Section, at Mile 73, involved 0.61 mile of grading, surfacing and oiling on new line and grade to eliminate two sharp and dangerous curves which had been the scene of several accidents. The Rosedale Section, at Mile 192, involved 0.87 mile of grading, surfacing and bituminous macadam wearing surface on revised location and, likewise, serves to eliminate a hazardous condition due to the previous sharp curvature and restricted sight distance.

The biennium has also seen the completion of the First Avenue-Esplanade Street Section at Klamath Falls, an ex-

Reconstructed Old Oregon Trail north of Ontario in Malheur County.

tensive development and improvement in the routing of traffic from the city center to the north. This project was more fully described in the preceding biennial report.

Expenditures amounted to $552,428 for construction activities on this route during the biennium.

John Day Highway, Oregon No. 19 and U.S. No. 28: Between Jamieson and Vale, a 17.36-mile section has been reoiled to provide a more stable and safer riding surface at cost of $114,062. The Dads Creek-Dixie Summit Section in Grant County has been surfaced and oiled as a Forest Road project under supervision of the U. S. Bureau of Public Roads.

Old Oregon Trail Highway, U.S. No. 30: On the Stanfield-Pendleton Section, a 20.52-mile unit of highway has been reoiled and new shoulder material furnished to stabilize and restore the surface which had been seriously damaged by unusually severe winter conditions.

The Pumping Plant Hill-Ontario Section, 5.72 miles in length, has been built up, reinforced and widened with a heavy lift of gravel base materials and has been paved with a 3-inch lift of 22-foot asphaltic concrete.

Expenditures for construction during the biennium on the Old Oregon Trail Highway amounted to $493,492.

Oregon-Washington Highway, Oregon No. 11: On the Pendleton-Adams Section, an 11.8-mile unit of the highway was reoiled and new shoulder material added to restore the road surface to stable condition after unusually severe frost damage had created conditions of severe discomfort to the users of the highway. Construction expenditures on the route during the 2-year period came to $90,378.

Oregon Coast Highway, U.S. 101: Nine road construction projects have been completed on this highway during 1949 and 1950, affecting 18.59 miles of road.

On the Summit-Tolovana Park Section, in the vicinity of Cannon Beach, 1.27 miles of grading and bituminous macadam surfacing and 1.95 miles of grading and topping has been completed. The work has been performed on an entirely new location which has eliminated the extremely sharp curves and steep grades of the hill north from Cannon Beach, and lies about one-fourth mile east of the present road at Elk Creek and southerly thereof. The 1.27-mile north portion of the project, carrying a 20-22-foot bituminous surfacing, is open to travel, whereas the southerly part, graded and topped only, is planned for later surfacing as the highway relocation is extended southerly another 1.5 miles to Hug Point.

One-half mile of grading, surfacing and oiling was done on the West Nehalem Section improving the grade and line at Nehalem hill. At Garibaldi, 0.43 mile of roadbed was widened and paved with asphaltic concrete to provide parking space for local use without congesting through traffic.

The Tillamook-Pleasant Valley Section, 5.74 miles in length, has been graded and paved with a 5-inch lift of asphaltic concrete pavement 22 feet in width. The project involved two major line changes, the widening and resurfacing portions of the old, narrow pavement, and the construction of four bridges, six concrete cattle passes and one concrete box culvert. As a part of the project, 3rd Avenue was widened and paved between new curbs to a 42-foot width to serve northbound traffic and channelization of traffic has been provided at the south corporate limit of Tillamook. By means of the relocation of the highway, a saving in travel distance of 1.03 miles is effected. The replacement of the old pavement and its sharp curves with the new and modern highway results in a material improvement of consequence to the heavy traffic carried on this section of highway.

Between Agate Beach and Newport, a 2.04-mile section has been brought to the status of modern highway design by the grading and a 2-inch lift of 22-foot bituminous macadam surfacing on a new location closely paralleling the ocean beaches. At Big Creek, near the center of the project, a 0.7-mile section involving a new bridge on new line was omitted from the present project due to shortage of funds but is planned for reconstruction in an early future program.

Three projects between North Bend and Coquille have been completed during the 1949-50 period. Between North Bend and

Reconstructed Oregon Coast Highway north of Coquille, Coos County.

Coos Bay, 2.28 miles of grading and 5-inch asphaltic concrete paving has completed the 4-lane, divided highway between the cities. The Delmar-Coaledo and Coaledo-Chrome Plant projects, representing 4.89 miles of new highway on relocated and modern standards, involved heavy grading and the placing of a 5-inch lift of asphaltic concrete pavement to provide four traffic lanes. About halfway between Delmar and Coaledo, the new highway is carried over the tracks of the Southern Pacific Company on a new reinforced concrete structure, thus eliminating the dangers of the old crossing at grade.

At Port Orford, a 1.02-mile section through the city has been widened, surfaced and oiled to a width of 64 feet between new curbs to provide a 4-lane highway with parallel parking areas on either side thereof.

At Gold Beach, a 0.37-mile section through the business area has been widened and paved with a 3-inch lift of asphaltic concrete to a width of 64 feet between new curbs, providing four 12-foot lanes for traffic and 8-foot parking areas on either side.

Expenditures for construction on the Oregon Coast Highway during the biennium amounted to $4,509,139.

Enterprise-Lewiston Highway, Oregon No. 3: The northerly 9.47 miles of this highway, from the Washington State Line to Flora Junction has been surfaced and oiled on the previously-built relocated roadbed. A 5.85-mile unit, the North Unit of the Enterprise-Forest Boundary Section, has been graded, surfaced and oiled. As a result of these two projects and previous construction, the route has been improved to oiled status from Enterprise northerly for 13.4 miles and from the State line southerly for 9.5 miles, leaving about 21 miles yet to be brought to the status of an oiled riding surface. The southerly four miles of this gap has been graded and topped on revised line and grade as a Forest Road project under supervision of the U. S. Bureau of Public Roads.

During the biennium, $336,745 was spent for construction on this highway.

Baker-Homestead Highway, Oregon No. 86: The Table Rock Creek Section, about 25 miles east of Baker, has been regraded, surfaced and oiled on improved alignment and grade. This project, 1.54 miles in length, has eliminated two bridges, thus reducing maintenance costs, and has eliminated several sharp curves. The cost of this project was $124,234.

Baker-Unity Highway, Oregon No. 7: At Baker, the biennium has witnessed the completion of the Dewey Avenue Grade Separation Project, involving the construction of a new structure carrying the Union Pacific Railroad over the highway, the grading and paving of 0.2 mile of new highway roadbed, the construction of about 0.9 mile of railroad roadbed and the construction of paved side streets to serve business alongside the depressed highway at the structure site.

Santiam Highway, U.S. No. 20: The easterly 15.5 miles of this highway has been surfaced and oiled as a Forest Road project under the supervision of the U. S. Bureau of Public Roads, thus bringing this highway to the status of an oiled or better type of riding surface throughout.

Willamette Highway, Oregon No. 58: During the 1949-50 period, the Pleasant Hill-Lost Creek Section, 5.28 miles in length, and the 4.15-mile Lost Creek-Lowell Section have been completed on new line to modern standards. The construction consisted of a 2½-inch bituminous macadam surfacing 22 feet in width with 5-foot shoulders on a 17-inch gravel base. Adjoining these sections on the east, the old highway is now being reconstructed on new location by the Corps of Engineers, U. S. Army, in connection with construction of the Lookout Point Dam.

During the 2-year period, a Forest Road Project extending 21.10 miles, from Oakridge to Salt Creek Falls, has been completed to provide a widened roadbed, new rock base and 4-inch asphaltic concrete pavement, the work having been supervised and financed by the U. S. Bureau of Public Roads.

From a point near Salt Creek Falls, easterly 15 miles towards Odell Butte, the present highway has been strengthened and resurfaced by the addition of 12 inches of new base material and the placing of a 2½-inch lift of 22-foot bituminous macadam wearing surface.

Construction expenditures totaled $1,357,007 on the Willamette Highway during the biennium.

Klamath Falls-Lakeview Highway, Oregon, No. 66: The Quartz Mountain-Smalley Ranch Section, 5.24 miles in length, has been graded, surfaced and oiled as a Forest Road project under the supervision of the U. S. Bureau of Public Roads, materially improving the alignment and grade on this portion of the route.

Crater Lake Highway, Oregon No. 62: From Cascade Gorge northerly to a point 1.2 miles north of Prospect, the 7.5-mile section of highway has been widened and resurfaced to provide a 20-foot width of asphaltic concrete pavement averaging three inches in thickness over the existing 18-foot oiled surface. This surface strengthening and widening was necessary due to heavy log hauling and involved an expenditure of $187,000.

Burns-Crane Highway, Oregon No. 78: The modernization of this route has been completed with the construction of the 10.9-mile Lawen-Crane Section which provides a 20-foot oiled wearing surface 1¼ inches thick on an 8-inch cinder base, at a cost of $99,008.

Redwood Highway, U.S. No. 199: The section of this highway from Cave Junction to the California State boundary, a distance of 13.2 miles, has been widened and improved to provide a 20-foot width of 3-inch asphaltic concrete pavement placed over the existing surface. This improvement involved the flatening of curves, the widening of 4.5 miles of old 14-foot wearing surface and the general strengthening of the surfacing to render a safer and more adequate service to the heavy hauling vehicles and passenger traffic using this route. The cost of the improvement was $257,083.

Alsea Highway, Oregon No. 34: During 1949 and 1950, this highway has been improved to considerable extent by the completion of the surfacing and oiling of the Smallwood Creek-Benton County Line Section, 9.56 miles in length; and the resurfacing with a 3-inch lift of asphaltic concrete pavement on the Alsea-Alder Creek Section, 8.00 miles in length, both projects having been done under State Highway Commission supervision. During the same period, the U. S. Bureau of Public Roads has supervised the construction and completion of the grading, surfacing and oiling of the Alsea River-Hatchery

Traffic separation structure, Sunset Highway and Tualatin Valley Highway west of Portland.

Section, 4.07 miles in length, the grading of the 6.44-mile Hatchery-Smallwood Creek Section and the Scott Creek Bridge, and has underway the surfacing and oiling of 10.44 miles of roadway between the Alsea River and Smallwood Creek. A 223-foot concrete bridge was constructed over Mary's River near Philomath, providing a 26-foot roadway and sidewalks. All these projects have been constructed to modern standards of line and grade commensurate with the topography of the country.

Construction expenditures on this highway by the Commission during the 2-year period amounted to $197,115.

Tualatin Valley and Wilson River Highways, Oregon No. 6: The West Slope-Beaverton Section of the Tualatin Valley Highway has been widened for 2.26 miles with Portland cement concrete pavement to provide a 4-lane highway and the channelization of traffic at Beaverton, at a cost of $289,408.

The Jordan Creek-McNamars Camp Section of the Wilson River Highway has been resurfaced for 7.11 miles with a 3-inch lift of asphaltic concrete pavement to strengthen the wearing surface to withstand the heavy hauling to which this portion of the route is subjected. The construction cost was $130,547.

Salmon River Highway, Oregon No. 18: On the Otis Junction-Sulphur Creek Section, 7.54 miles in length, a 3-inch lift of asphaltic concrete pavement has been placed over the old oiled surface at a cost of $137,283. This resurfacing serves to strengthen the traveled way which had shown signs of failure under the heavy hauling to which the highway has become subjected since its completion.

Ochoco Highway, U.S. No. 28: That portion of this highway which lies between the Ochoco reservoir and Mitchell has been under reconstruction for several years. The work involves a major relocation of the highway across the Ochoco mountains and general modernization and improvement of the section.

During 1949 and 1950 the U. S. Bureau of Public Roads has supervised Forest Road projects which have seen the completion of the grading and bridges on three projects between Mark's Creek and the East Forest Boundary, 18.2 miles in length, and the letting of a contract for their surfacing and oiling to be completed in 1951. Meanwhile, the State has completed the grading, surfacing and oiling on new line from the East Forest Boundary to Jones Ranch, a distance of 3.86 miles, and has oiled the 9.94-mile section from Jones Ranch to Mitchell. Also, 6.9 miles of the highway between Powell Butte and Prineville has been strengthened and reoiled to provide a more stable riding surface.

Construction expenditures on the Ochoco Highway by the Highway Commission, during the biennium, have amounted to $413,004.

Umpqua Highway, Oregon No. 38: During the 2-year period, a 2.08-mile section between Luder Creek and Murphy's Camp, about two miles west of Scottsburg has been widened, resurfaced and oiled to improved line and grade. The old highway at this point was extremely narrow and dangerous, being literally benched into solid rock cliffs overlooking the Umpqua River at many points. Approximately 16,000 linear feet of metal guard rail on concrete posts has been placed along the river side of the highway between Reedsport and Scottsburg which will materially reduce hazards of travel on the route.

Expenditures during the biennium on the Umpqua Highway amounted to $181,248.

John Day-Burns Highway, U.S. No. 395: As Forest Road work under the supervision of the U. S. Bureau of Public Roads, two projects have been undertaken during the two-year period covered by this report. The North Unit, Soda Mountain-Silvies Section in Grant County, 4.13 miles in length, has been graded, surfaced and oiled to improved status; while the Crow Flat-Poison Creek Section, involving 8.4 miles of grading to improved line and grade is nearing completion. A future Forest Road project to extend the grading further south 3.9 miles and to surface and oil the 12.3-mile section thus graded is planned for early letting as funds will permit.

Klamath Falls-Malin Highway, Oregon No. 39: On the Henley-Lost River Section, 7.8 miles in length, the highway has been regraded, surfaced and provided with a 2½-inch lift of

22-foot bituminous macadam wearing surface, bringing this section to modern standards of highway design. Also, at Malin a 0.32-mile section in the vinicity of the school and north entrance to the city was widened to similar standards to provide for 4-lane traffic and turning movements in line with the Commission's policy of reducing highway hazards and enhancing the safety of highway use.

Construction activities on the Klamath Falls-Malin Highway during the biennium involved an expenditure of $293,437.

Warm Springs Highway, Oregon No. 50: This highway, 46.3 miles in length, extends from the Wapinitia Highway on the north to Madras on the south and has been brought to completion and opened to traffic during the biennium. The northerly 7.01-mile Clear Creek-Forest Boundary Section was graded by the State, and later surfaced and oiled as a Forest Project under supervision of the U. S. Bureau of Public Roads. The Mill Creek Bridge, about 11 miles north of the Warm Springs Indian Agency, has been completed and is reported in more detail under the Report of the Bridge Department. This structure carries the highway over a spectacular canyon about 225

Warm Springs Highway near the Mt. Hood Forest Boundary, surfaced under a Forest Road contract.

feet above the stream. From the Forest Boundary to the Warm Springs Indian Agency, a distance of 17.76 miles, surfacing and oiling have been completed on previously-graded roadbed. On the previously-surfaced section from the Wasco County Line to Madras, 15.2 miles of rock base strengthening and new oiled wearing surface has been completed. The highway is of oiled macadam traveled-way throughout and affords a saving in travel distance of 33 miles between Madras and Portland.

Expenditures for construction on this highway during the biennium amounted to $1,187,494.

Secondary State Highways

During the 1949-1950 period, there have been 34 highway construction projects and three major bridges on 27 of the highways on the secondary state highway system.

A brief description of these projects, grouped by geographical divisions of the state, is as follows:

Division No. 2: Comprising the westerly portion of Columbia County, the southerly portion of Yamhill County, and the counties of Clatsop, Tillamook, Lincoln, Benton, Polk, Marion and Linn. In this division, there were nine construction projects completed during the 2-year period, involving 17.19 miles of grading or grade widening, 26.5 miles of rock base construction, 17.48 miles of oiled surfacing, 14.52 miles of bituminous macadam surfacing, 11.57 miles of asphaltic concrete paving and one major bridge.

On the Warrenton Highway, between 19th and Hayes Streets in Warrenton, a 0.92-mile section was improved by the widening of the roadbed and rock base and the widening and resurfacing with asphaltic concrete of the old, narrow pavement. At Aumsville on the North Santiam Highway, 0.37 mile of the highway was widened and new asphaltic concrete placed to provide a street section of ample width to carry through traffic without interference to or with local traffic. On the Nashville-Blodgett Section of the Eddyville-Blodgett Highway, 7.57 miles of reoiling has been performed to strengthen the surface and to reduce maintenance costs. On the Kings Valley Secondary Highway, a new bridge over the Little Luckiamute River has been completed to replace the old, narrow and inadequate structure and 0.39 mile of roadway connections on higher grade line has been graded and surfaced with bituminous macadam placed on a heavy rock base. Between Kings Valley and Read Creek, 5.70 miles of new rock base and bituminous macadam surfacing has been placed to strengthen the roadway to more adequately support the heavy hauling prevalent in that area. Between Corvallis and Albany on the Corvallis-East Side Highway, 9.91 miles of the route have been resurfaced and reoiled for increased stability and improved service. On the Albany-Lyons Highway, 8.43 miles on the Thomas Creek-Lyons Section has had new rock base placed over the old, weak surfacing and a new bituminous macadam surfacing placed thereon. Underway at the present writing is the improvement of an adjoining 4.24-mile section on the west which is expected to be completed in the early summer of 1951. On the Halsey-Sweet Home Highway, 0.31 mile of pavement widening in Brownsville and 0.67 mile of similar work in Sweet Home has been performed to strengthen these sections and provide greater width for the convenience and safety of traffic. On the Halsey-Crawfordsville Section of the same highway, the 9.3-mile section has been widened and resurfaced with asphaltic concrete to provide a 20-foot riding surface and to strengthen the highway as required by the heavy hauling to which it is subjected.

Division No. 3: Comprising the counties of Lane, Douglas, Coos, Curry, Josephine and Jackson. In this division, there were seven highway construction projects and one major highway-railroad separation structure completed during 1949 and 1950, involving 20.15 miles of grading, 25.59 miles of rock base and surfacing, 24.89 miles of oiling and 5.23 miles of asphaltic concrete paving.

On the Richardson-Eugene Highway, a 5.44-mile section between Noti and Elmira was surfaced and oiled to provide stability to the roadway and improved service to traffic. The 5.23-mile section from Veneta to the Fisher Road was resurfaced with asphaltic concrete pavement. Between the Fisher Road junction and Oak Hill, a 1.26-mile section has been graded, surfaced and oiled on new line and grade and a new reinforced

Crooked River Bridge and approaches on U. S. 28 at Prineville, Crook County.

concrete structure built to carry the highway over the railroad tracks of the Southern Pacific Company. The Elkton-Sutherlin Highway has been improved by the construction of 7.37 miles of grading, surfacing and oiling on new line and grade. A 0.7-mile section of the Coos River Highway, near the Enegren ferry, has been regraded and surfaced to give improved width and stability to the roadway. On the Rogue River Loop, out of Grants Pass, a 4.5-mile section from the Robertson Bridge over the Rogue River southeasterly to the Gunnell Road was regraded, surfaced and oiled to modern standards. On the Sams Valley Highway, the 6.25-mile Snider Creek-Crater Lake Junction Section has been graded, surfaced and oiled to modern standards on a new and shorter line. On this section, at the crossing of the Rogue River, a short section of the old road and the old bridge remains in service, although plans call for their replacement as funds will permit.

Division No. 4: Lying easterly of the summit of the Cascade Mountains and comprising the central portion of Oregon between the Columbia River and California. Eight highway construction projects were completed during the 2-year period, involving 52.34 miles grading, surfacing and oiling.

At Collins Creek on the Hood River Highway, a hazardous condition of sharp curvature and limited sight distance has been eliminated by 0.5 mile of roadbed reconstruction. On the Odell Secondary Highway, the 1.87-mile section from the Hood River Junction to Odell Creek has been improved by regrading, new rock base and an oiled wearing surface. The west unit of the Deschutes County Line-Prineville Section of the O'Neil Highway was regraded, surfaced and oiled to modern standards for a distance of 5.29 miles. On the Powell Butte Highway, the section from the Crook County Line to the Bend airport, 7.56 miles in length, has also been similarly improved. On the Paulina Highway, the 15.93-mile Prineville-Eagle Rock Section has been regraded, surfaced and oiled to serve the area southeast of Prineville with a shorter route on an improved road. On the Warner Secondary Highway, the 21.19-mile section from the Fremont Highway junction to

Drake Creek has been graded, surfaced and oiled under three separate contracts, the new roadway being on improved line and grade throughout. The completion of the improvement of this highway easterly to Adel is expected in 1951 under a contract now in progress.

Division No. 5: Comprising the most easterly portion of Oregon. In this division, there were 10 highway construction projects completed during 1949 and 1950, involving 58.82 miles of grading and surfacing, and 53.04 miles of oiling.

On the Athena-Holdman Secondary Highway, the Holdman Junction-Campbell Ranch and Campbell Ranch-Gerking School Sections, totaling 13.11 miles in length, have been regraded, surfaced and oiled to improved standards. The 6.14-mile Hardman-Chapen Creek Section of the Heppner-Spray Highway has been graded, surfaced and oiled on improved line and grade. The southerly 13.68 miles of the Medical Springs Highway on the Miles Bridge-Baker Section has been graded, surfaced and oiled and brought to better standards of surface, width and stability. A 5.78-mile section, the Hilgard Junction-Red Bridge Section, on the Starkey Highway has been graded and surfaced with pit-run gravel on revised alignment and to modern standards of construction. On the Joseph-Wallowa Lake Highway, the North Unit, 1.31 miles in length, has been regraded, surfaced and oiled, thus bringing this highway to improved and modern standards throughout. The 5.44-mile length of the West Unit, Hamilton-Long Creek Section of the Kimberly-Long Creek Highway was completed during the biennium, the work involving regrading, surfacing and oiling to provide a roadway of adequate design and stability. The 4.05-mile Salisbury Junction-Poker Creek Section on the Sumpter Valley Highway has been graded, surfaced and oiled to provide a wider, more stable riding surface. The south unit of the Princeton-Follyfarm Section, 8.8 miles in length, on the Rome-Princeton Highway has been graded, surfaced and oiled on new alignment and to modern standards, thus bringing the southerly 41.4 miles of the route to completed status. On the Nyssa-Adrian Secondary Highway, the 0.51-mile Garrison Corner Section has been graded, surfaced and oiled on revised line, eliminating a railroad crossing at grade and materially reducing curvature on the old route.

Expenditures made for construction work on the secondary state highway system during the biennium amounted to $5,568,785.

County Roads

During 1949 and 1950, 11 highway construction projects and five bridge projects have been or are nearly completed under state supervision on county roads lying outside of the primary and secondary state highway systems. With the exceptions noted below, these projects were located on the federal system of secondary highways under cooperative agreements with the U. S. Bureau of Public Roads. The projects are briefly described as follows:

1. Sauvie Island Bridge over the Willamette Slough, connecting the Gillihan County Road on Sauvie Island to the Columbia River Highway at a point about one mile northwest of the north corporate limit of Portland. Details of the bridge construction are given later in the report of the Bridge Department. A contract for the construction of the roadway approaches to the bridge is now underway with completion called for June 30, 1951.

2. Carlton-Chehalem Creek Section of the county road of the same name in Yamhill County. 2.8 miles of grading, surfacing and oiling on improved line, width and grade.

3. Sheeley Bridge-Sunset Camp Section of the Nehalem County Road in Columbia and Washington Counties. 5.68 miles of asphaltic concrete paving to strengthen the road surface to withstand increased loading due to log hauling.

4. Wilson Creek-Spitzenberg Section of the Pittsburg-Scappoose County Road in Columbia County. 6.91 miles of surfacing and oiling.

5. Independence bridge over the Willamette River on the Independence Salem County Road. This structure is being con-

structed under a cooperative agreement between the State and the counties of Marion and Polk, under supervision of the State Highway Commission. The structure consists of 927 feet of timber trestle approaches and 1,267 feet of steel girder spans with concrete deck. It is expected to be completed in the early part of 1951 at a cost of approximately $950,000.

6. Ferry Street Bridge over the Willamette River and the East Eugene Overcrossing structure, both on the Eugene-Coburg County Road at Eugene. These two structures and the roadway approaches to them are being financed by Lane County and the city of Eugene. The improvement will eliminate the hazardous grade crossing on the old route, will replace the present narrow and obsolete bridge over the river, and materially expedite the flow of traffic to and from the city center and adjacent industrial developments. Work is now underway on the structures and their roadway approaches and is expected to be completed in the summer of 1951. Details of the structure contracts are set forth hereinafter in the Report of the Bridge Department.

Ferry Street Bridge over the Willamtte River in Eugene, built for Lane County.

7. Roseburg-Dixonville Section of the North Umpqua Road in Douglas County. 4.39 miles of grading, rock base and asphaltic concrete paving to provide a stable roadway adequate for heavy hauling activities.

8. Marks Ranch-Lone Rock Bridge Section of the North Umpqua Road in Douglas County. 5.32 miles of grading, rock base and asphaltic concrete paving of adequate design for heavy logging traffic.

9. Rogue River Bridge near the town of Rogue River in Jackson County. This project has been completed under a cooperative agreement whereby Jackson County paid for its construction with the understanding that the State will construct the new Bybee Bridge, now under construction on the Table Rock County Road north of Medford, as secondary federal aid project. Details concerning the Rogue River Bridge project are given hereinafter in the Report of the Bridge Department.

10. Wamic-Tygh Valley Section of the Wamic County Road in Wasco County. 5.67 miles of grading, surfacing and oiling to improved line, grade and width of roadway.

11. Terrebonne-Crook County Line Section of the Smiths Rock County Road in Deschutes County. This project was constructed under a cooperative agreement with Deschutes County. 3.81 miles of grading, surfacing and oiling to improved standards of construction.

12. Chiloquin-Sprague River Section of the Sprague River Road in the Klamath Indian Reservation in Klamath County. This project was constructed under a cooperative agreement with the U. S. Indian Affairs Bureau. 17.83 miles of surfacing and oiling.

13. Scott Canyon Section of the county road of the same name in Sherman County. 2.91 miles of grading, surfacing and oiling to improved standards.

14. Holdman-Helix Section of the county road of the same name in Umatilla County. This project was constructed under a cooperative agreement with Umatilla County. 13.9 miles of regrading, surfacing and oiling to provide a stable roadway.

15. Imbler-Dry Creek Section of the county road of the same name in Union County. 5.64 miles of regrading, surfacing and oiling to improved standards of design.

Expenditures made during the biennium for construction of various projects on county roads not on either of the two state highway systems amounted to $4,251,220.

City Projects

Construction work in connection with the improving of city streets not on either of the two state highway systems has been progressing well during 1949 and 1950. This work is undertaken in the expenditure of $250,000 per year of state highway funds apportioned to city street improvement by legislative act, particulars of which are set forth in another part of this report.

During the 2-year period, work has been completed in 31 cities, involving 5.24 miles of grading, 6.51 miles of rock base construction, 5.29 miles of oiling, and 4.10 miles of asphaltic concrete paving. New concrete curb construction and new storm drain sewer construction were required in many instances.

The cities in which these completed projects occurred are as follows: Amity, Brownsville, Cave Junction, Drain, Eagle Point, Freewater, Gold Beach, Gresham (2 projects), Harrisburg (2 projects), Helix, Hillsboro, Hood River, Lebanon, Milton, Mosier, Myrtle Creek, North Powder, Oakland, Oakridge, Phoenix, Redmond, Rogue River, Scappoose, Sherwood, The Dalles, Tillamook, Toledo, Waldport, West Salem, Willamina and Yoncalla.

CLASSES OF HIGHWAYS

The classes of highways with which the Highway Commission is normally concerned, and in connection with which it normally expends the state and federal funds which are entrusted to it, are as follows:

1. Primary State Highways.
2. Secondary State Highways.
3. Federal Aid Primary Highways.
4. Federal Aid Secondary Highways.
5. Federal Aid Urban Highways.
6. Public Lands Highways.
7. Federal Forest Highways.
8. County Roads.

Classification of highways as above indicated is made necessary by the several plans of highway financing that have been developed during the years by the State and Federal Governments. Each plan of financing limits itself to particular highways or kinds of highways and thus establishes a new classification. It is possible for a highway to be in two or more classes. For instance, a primary state highway may also be a primary federal aid highway. Likewise, a road may be both a county road and a secondary federal aid highway.

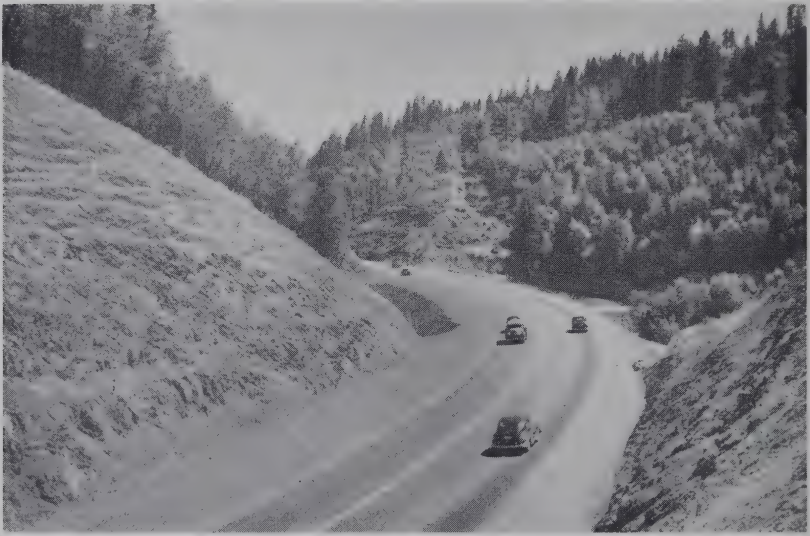
Brief descriptions of these several different classes of highways are given in the paragraphs which follow:

Primary and Secondary State Highways: State highways are those highways for which the State has assumed the responsibilities of maintenance and improvement. In the beginning, all state highways were of the same class, but when the point was reached where the system included a complete network of the main arterial highways, it became desirable to have a separate system for highways which serve as feeders to the main network rather than as main lines. The main arterial system was, therefore, designated the Primary State Highway System, and a second system, called the Secondary State Highway System, was set up to receive such additional highways as might not be considered of sufficient importance to justify inclusion in the Primary System.

Additions to the Primary System may be made by the state legislature or by the State Highway Commission. Additions to the Secondary System may be made by joint action of the State Highway Commission and the county court of the county in which the highway is situated. The conditions under which state moneys may be expended on primary and secondary highways are the same for both classes. Counties bear no financial responsibility for the maintenance or improvement of either class.

The present mileage of Primary State Highways is 4,805. The present mileage of Secondary State Highways is 2,508. Complete listings of the highways included in the primary and secondary systems are given in Tables 29 to 32 in Section Three of this report. A small-scale map showing the highways which comprise the two systems is also included in Section Three.

Listings of expenditures made on the primary and secondary state highways appear in Tables 11 to 16, inclusive, in Section Three.



U. S. 99 reconstructed over Stage Road Pass showing third lane for trucks, Douglas County.

Federal Aid Primary Highways: The Federal Aid Primary System of highways comprising those highways which have been designated under authority of the Federal Highway Act of 1921 as highways eligible to have primary federal aid funds expended upon them. The highways in this system are selected and designated by mutual agreement between the Highway Commission and the Federal Bureau of Public Roads. The total mileage of highways of this class is limited to eight per cent of the total mileage of public roads in existence in 1921, which places the limit for the State of Oregon at 3,346.1 miles, exclusive of miles within national forests and other federal reservations and exclusive of miles within urban areas. In the system as now approved, the mileage, exclusive of miles in national forests and other reservations and in urban areas, is 3,262. The mileage in national forests and other reservations is 522. The mileage in urban areas is 136.

Federal aid primary funds allotted to the State of Oregon for use on federal aid primary highways for the fiscal years 1941 to 1952 were as follows:

Fiscal year 1941	$1,884,937
Fiscal year 1942	1,647,906
Fiscal year 1943	1,649,132
Fiscal year 1944	None
Fiscal year 1945	None
Fiscal year 1946	3,728,908
Fiscal year 1947	3,728,403
Fiscal year 1948	3,683,994
Fiscal year 1949	None
Fiscal year 1950	3,330,486
Fiscal year 1951	3,325,613
Fiscal year 1952 (approx.)	3,930,000

A complete listing of the Federal aid primary highways in Oregon is given in Table IV in Section Two of this report.

Federal Aid Secondary Highways: The federal aid road act adopted by Congress during the session of 1944 amended the federal act of 1936 which created a federal aid secondary highway system.

The federal act of 1936 provided for a secondary system which would equal 10 per cent of the rural road mileage of the state. The mileage available to the state under the terms of this act was 4,933, and there was recommended to the Federal Bureau of Public Roads a system of 1,148 miles, which was approved.

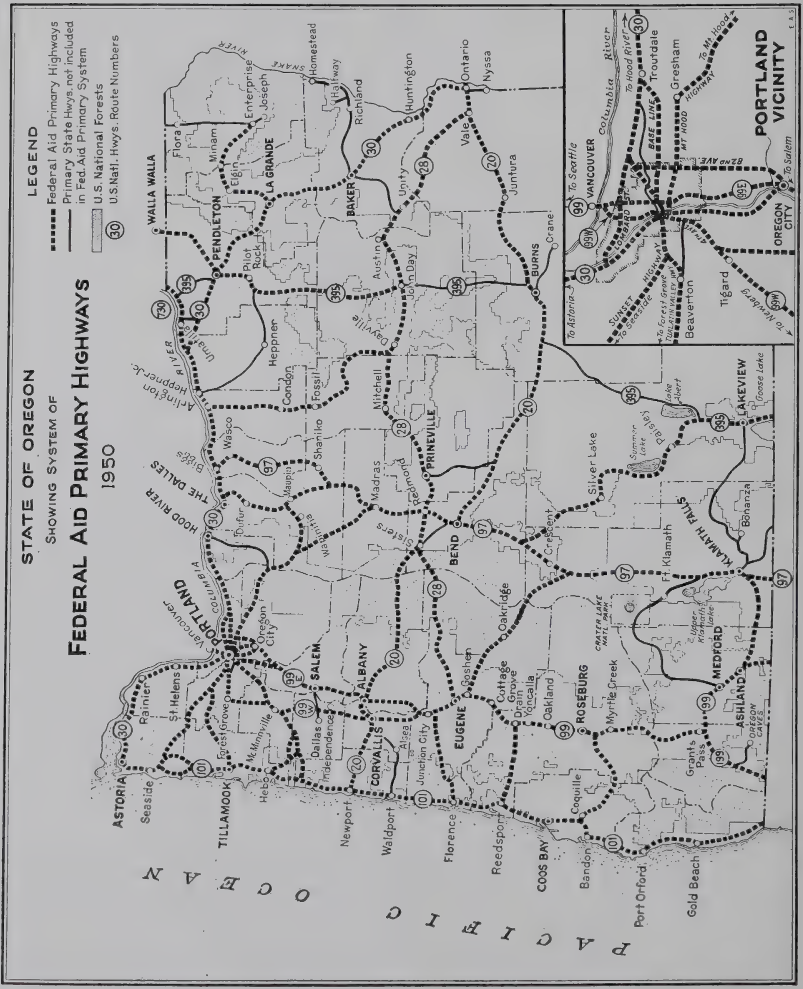


TABLE IV

Federal Aid Primary Highway System

Federal Route No.	Highway	Total Federal Aid Mileage Inclusive of Miles Within Urban Areas and Reservations	Mileage Within Urban Areas	Milage Within National Forests	Mileage Within Indian Reservations	Total Federal Aid Mileage Exclusive of Miles Within Urban Areas and Reservations
1	Astoria to Ontario	511.33	29.15	29.55	*24.44	428.19
2	Oregon Coast Highway	397.69	7.78	46.38	† 0.29	343.24
3	Pacific Highway	337.85	21.19	7.53	....	309.13
4	The Dalles-California Highway	279.47	5.22	19.46	50.10	204.69
5	Eugene to Ontario	385.00	0.24	86.01	....	298.75
6	Arlington to Rock Creek	123.63	....	....	....	123.63
7	La Grande to Enterprise	66.25	0.42	....	....	65.83
8	Heppner Junction to Pendleton‡	....	....	....	....	....
9	Pacific Highway West	116.04	14.20	....	....	101.84
10	Albany-Corvallis Highway	10.50	1.97	....	....	8.53
11	McMinnville-Tillamook Highway	48.68	....	13.44	....	35.24
12	Sherman Highway	69.00	....	....	....	69.00
13	Ft. Klamath to Crater Lake‡	....	....	....	....	....
14	Coos Bay-Roseburg Highway	61.81	....	....	....	61.81
15	Green Springs Highway	56.34	0.98	1.57	....	53.79
16	Fremont Highway	158.23	....	14.25	....	143.98
17	Redwood Highway	42.34	....	0.93	....	41.41
18	Boardman to Wallula	39.49	....	....	....	39.49
19	Pendleton to Washington State Line	36.60	0.06	....	....	36.54
20	Umpqua Highway	50.13	....	0.57	....	49.56
21	Bend to Burns	131.71	1.19	....	....	130.52
22	Corvallis-Newport Highway	56.91	0.99	....	....	55.92
23	Salmon River Highway	21.92	....	....	....	21.92
24	Portland to Maupin	99.21	6.72	37.04	....	55 45
25	Siuslaw Highway	67.32	....	17.60	....	49.72
26	East Portland-Oregon City	19.51	12.58	....	....	6.93
27	Sunset Highway	65.52	5.96	....	....	59.56
28	Cannon Beach Road	20.96	....	....	....	20.96
29	Willamette Highway	87.17	....	64.12	....	23.05
30	Pendleton-John Day	122.15	1.66	16.67	....	103.82
31	Burns to Vale	114.97	....	....	....	114.97
32	Tualatin Valley Highway	42.36	3.45	....	....	38.91
33	Klamath Falls-Weed Highway	14.30	....	....	....	14.30
34	Boyer-Dolph	5.60	....	4.90	....	0.70
35	Tillamook to Banks	54.32	....	....	....	54.32
36	Pendleton to Cold Springs‡	....	....	....	....	....
37	Santiam Highway	101.30	0.06	53.53	....	47.71
38	Fourth Avenue entrance to Portland§	....	....	....	....	....
39	Base Line Road	13.00	4.58	....	....	8.42
40	Lombard Street	10.90	7.85	....	....	3.05
41	82nd Avenue	13.80	6.21	....	....	7.59
42	West Portland-Hubbard Highway	17.50	....	....	....	17.50
43	Front Avenue, Portland	3.36	3.36	....	....	....
44	Warm Springs Highway	46.40	....	7.00	27.00	12.40
	Totals	3,920.57	135.82	420.55	101.83	3,262.37

* Includes 2.20 miles in Celilo Canal Reserve.

† Cape Perpetua Lighthouse Reserve.

‡ Withdrawn from Federal Aid System.

§ Included in Route No. 9.

Under the terms of the act of 1944 the 1936 law was amended, and no limitation was placed upon the mileage which could be included in the system, except that the mileage in the initially selected system should be no greater than could be improved within a reasonable period of time. The federal act of 1936 provided that the roads to be included in the system should be by cooperative agreement between the State Highway Commission and the Commissioner of Public Roads. The act of 1944 provides that the roads to be included in the system shall be as agreed upon by the local authorities, which in the State of Oregon are the county courts, the State Highway Commission, and the Commissioner of Public Roads.

Soon after the act of 1944 was approved, the Highway Department undertook a study to determine the highways and county roads that could be considered for inclusion in the secondary and feeder road system.

Of first importance in the selection of the system was to determine the number of miles that could be constructed within a reasonable period of time. Based upon the probable revenues that might be available, it was determined that approximately 5,000 miles should be in the initial system.

It was at once evident that it would be advantageous to include in the federal secondary and feeder road system all of the mileage of primary state highways and all of the mileage of secondary state highways which were not a part of the Federal Aid Primary System, because if not included they would not be eligible for federal funds and their construction and reconstruction could not be carried forward with a reasonable expectation of being completed.

The mileages of primary state highways and secondary state highways that are not included in the Federal Aid Primary System are not evenly distributed throughout the counties, and to attempt to allocate a system of federal secondary and feeder roads in each county on the basis that the federal secondary feeder road funds are apportioned to the state, one-third rural population, one-third post road mileage, and one-third area, was not equitable. It was, therefore, determined that there should be approximately 1,700 miles of county roads, and the allocation of the mileage to each county should be based on the formula which is used in determining the apportionment of federal secondary and feeder road funds.

The county officials were then called into consultation, and their recommendations were requested as to what county roads in each county should be recommended for inclusion. The county officials agreed that the primary state highway mileage and the secondary state highway mileage not a part of the Federal Aid Primary System should be included, and also agreed that 1,700 miles of county roads were equitable and fair. As a result of this method of allocation, there are county roads in each county included in the system.

Following these conferences with the county officials, the State Highway Commission recommended to the Bureau of Public Roads a system of 5,080.88 miles, of which 926.01 were state primary highways, 2,394.57 state secondary highways, and 1,760.30 county roads.

The Bureau of Public Roads reviewed this recommendation, and as of January 29, 1945, gave official approval to 885.57 miles of primary state highways, 2,154.15 miles of secondary state highways, and 1,370.45 miles of county roads, or a total of 4,410.17 miles. The highways and roads not approved by the Bureau of Public Roads were not definitely eliminated from the proposed system, but were merely deferred for future consideration. The approved mileage creates a well-balanced system of secondary and feeder roads, the construction of which can be carried forward with funds that can reasonably be expected within the next 15 years, and the roads deferred for future consideration by the Bureau of Public Roads will be given study and as the need for their improvement becomes evident and analyses of the relative benefits are completed additional mileages may be added from time to time.

Several revisions have been made in the system since January 29, 1945. These changes are the results of new alignments, changing the status of certain routes from county roads to secondary state highways, extensions of certain routes in order to connect with federal aid primary highways which have changed their location due to reconstruction, and additions and deletions resulting from economic changes in various localities of the state. The revised system at the time of issuance of this report consists of 903.13 miles of primary state highways, 2,219.21 miles of secondary state highways, and 1,351.24 miles of county roads, or a total of 4,473.58 miles.

A list of the federal secondary and feeder roads which have been approved for inclusion in this system is given in Table V in Section Two of this report.

Federal aid funds alloted to the State of Oregon for use on federal aid secondary highways for the fiscal years 1941 to 1952 were as follows:

Fiscal year 1941	$ 245,861
Fiscal year 1942	288,383
Fiscal year 1943	288,598
Fiscal year 1944	None
Fiscal year 1945	None
Fiscal year 1946	2,544,582
Fiscal year 1947	2,544,245
Fiscal year 1948	2,513,880
Fiscal year 1949	None
Fiscal year 1950	2,272,391
Fiscal year 1951	2,269,150
Fiscal year 1952 (approx.)	2,715,000

Newly constructed Forest Boundary-Jones Ranch Section, U. S. 28, Wheeler County.

TABLE V

Secondary Federal Aid Highway System

The mileages given in this table are inclusive of mileages within cities, towns and urban areas.

F. A. S. No.	Name	Termini	Length in Miles
100	Three Mile Lane	FA 9 in McMinnville-FA 9 at Dayton Junction	8.35
101	Yamhill-Newberg	FA 32 in Yamhill-FA 9 in Newberg	11.65
102	Silverton-Newberg	FAS 147 in Silverton-FA 9 in Newberg	32.05
103	Bellevue-Hopewell	FA 11 at Bellevue-FAS 116 east of Hopewell	14.89
104	Lafayette	FAS 103 north of Hopewell-FAS 104 and 105 west of Dayton	6.25
105	Amity-Dayton	FA 9 north of Amity-FAS 100 east of McMinnville	7.03
108	Springbrook-Chehalem Mt.	FA 9 east of Newberg-FAS 650 near Chehalen Mt.	2.95
109	Carlton-Chehalem Creek	FA 32 in Carlton-FAS 101 northwest of Newberg	5.68
110	Pike-Yamhill	Pike-FA 32 in Yamhill	4.79
111	McMinnville-Carlton	FAS 112 north of McMinnville-FA 32 in Carlton	6.39
112	Baker Creek-McMinnville	Baker Creek-FA 9 in McMinnville	6.85
113	Gopher Valley	FA 11 east of Sheridan-Gopher Valley	4.50
114	Willamina-Coast Creek	FA 11 in Willamina-Coast Creek	6.30
115	Mt. Hood	FA 24 near Government Camp-FA 1 at Hood River	44.80
116	Salem-Dayton	U 280-123 in Salem-FAS 100 in Dayton	20.17
117	Marquam-Canby	FAS 140 west of Molalla FA 3 at Canby	8.02
118	Wilhoit-Molalla-Liberal	Wilhoit-FAS 147 at Liberal	9.09
119	Milwaukie-Gladstone	Milwaukie-FA 41 in Gladstone	4.79
120	West Linn-Oswego-Wilsonville Road	FA 3 in West Linn-FAS 122 southwest of Oswego	5.82
121	North Santiam	FAS 127 west of Shaw-FAS 37 at Santiam Junction	77.38
122	Newberg-Wilsonville-Oswego	FA 9 east of Newberg-FA 3 at Oswego	23.19
123	Salem-Dallas	FAS 190 in Dallas-U 280-123 in Salem	13.37
124	Mehama-Mill City	FAS 121 at Mehama-FAS 121 at Mill City	8.70
125	Jefferson	FA 3 south of Jefferson-FA 3 north of Jefferson	8.23
126	Greensbridge-Scio	FAS 125 at Jefferson-FAS 220 at Scio	9.11
127	Silver Creek Falls	U 280-003 in Salem-FAS 147 in Silverton	40.82
128	Yergen Corner-Aurora	FAS 102 south of Newberg-FAS 622 at Aurora	11.33
129	Clackamas-Boring	FA 41 at Clackamas-FA 24 near Sandy	12.50
130	Sublimity-Silverton	FAS 121 in Sublimity-FAS 147 in Silverton	13.20
131	Parkplace-Estacada	FA 41 at Parkplace-FAS 140 near Estacada	16.86
132	Clackamas-Eagle Creek	FAS 129 east of Clackamas-FAS 141 at Eagle Creek	10.05
137	Dallas-Coast	FA 11 east of Valley Junction-FAS 123 in Dallas	14.83
138	Monmouth-Independence	FA 9 in Monmouth-FAS 142 and FAS 193 in Independence	2.35

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
139	Monmouth	FAS 190 south of Dallas-FA 9 in Monmouth	7.20
140	Woodburn-Sandy	FA 3 north of Woodburn-FA 24 east of Sandy	48.49
141	Eagle Creek-Sandy	FA 24 in Sandy-FAS 140 near Eagle Creek	7.06
142	Independence	FAS 138 in Independence-FAS 123 west of Eola	6.38
144	Alsea	FA 2 at Waldport-FA 22 near Philomath	59.11
145	Eddyville-Blodgett	FA 22 near Blodgett-Nashville	7.57
146	Otis-Rose Lodge	FA 2 at Otis-FA 23 at Rose Lodge	4.10
147	Salem-Oregon City	U 280-003 in Salem-FA 41 at Oregon City	41.98
149	Schooner Creek	FA 2 at Taft-Schooner Creek	2.57
150	Siletz-Orton	FAS 196 at Siletz-Orton	8.00
151	Harlan-Burnt Woods	Harlan-FA 22 at Burnt Woods	8.05
152	Yachats River	FA 2 at Yachats-Yachats River	7.25
159	Salem-Brassel Corner	U 280-123 in Salem-FAS 102 near Woodburn	16.67
176	Independence-Salem	FAS 142 in Independence-U 280-003 in Salem	11.07
190	Kings Valley	FA 22 near Wren-FAS 123 in Dallas	28.05
193	Granger	FA 10 near Albany-FAS 142 in Independence	18.48
196	Siletz	FA 22 near Toledo-FA 2 at Kernville	31.73
200	Monroe-Cheshire	FA 9 in Monroe-FA 25 at Cheshire	8.66
201	Cheshire-Hadleyville	FA 25 near Cheshire-Hadleyville	16.09
202	Corvallis-Eastside	FA 9 in Corvallis-FA 3 at Albany	10.19
205	Granger-Wells	FA 10 at Granger-FAS 193 near Wells	5.33
206	Beaver Creek-Greenberry	Beaver Creek-FA 9 near Greenberry	5.80
207	Dawson-Bellfountain	Dawson-FA 9 near Monroe	6.78
208	Albany Airport	FA 37 near Albany-FA 3 at Albany Airport	1.07
210	Eugene-Harrisburg	FA 3 in Eugene-FA 3 in Harrisburg	19.08
212	Lebanon-Crabtree Corner	FA 37 in Lebanon-FAS 220 east of Crabtree	7.78
213	Brewster-Lacomb	FAS 212 near Lebanon-Lacomb	6.60
214	Lebanon-Berlin	FAS 212 near Lebanon-Berlin	9.07
215	Halsey-Sweet Home	FA 3 in Halsey-FA 37 in Sweet Home	21.51
216	Orleans-Lebanon	FAS 202 at Orleans-FA 37 in Lebanon	15.08
217	Sweet Home-Foster	FA 37 at Sweet Home-FA 37 at Foster	5.77
218	Holley-Rice School	FAS 215 near Holley-Rice School	4.78
219	Junction City-Eugene	FA 3 in Eugene-FA 3 in Junction City	13.52
220	Albany-Lyons	FA 37 near Albany-FAS 124 at Lyons	24.68
221	Creswell-Pleasant Hill	FA 3 at Creswell-FA 29 near Pleasant Hill	7.51
222	Springfield-Pleasant Hill	FA 29 near Pleasant Hill-FA 5 near Springfield	8.30
223	Fox Hollow	FA 3 near Walker-FA 3 in Eugene	15.50
225	Alsea-Deadwood	FA 25 near Swisshome-Paris	18.37
226	Canary	FA 2 near Florence-Canary	5.35
227	Junction City-Lewis Ranch	FA 3 in Junction City-Lewis Ranch	6.20
228	Eugene-Marcola	FAS 210 near Eugene-Marcola	16.10
229	Eugene-Gillespie Corner	FA 3 in Eugene-FAS 200 near Gillespie Corner	16.30
230	Jasper-Lowell	FA 29 at Lowell-FAS 222 at Jasper	11.36
231	Cottage Grove-Culp Creek	FA 3 in Cottage Grove-Culp Creek	16.36
232	Sutherlin-Elkton	FA 3 in Sutherlin-FA 20 at Elkton	27.57
233	Sutherlin	FAS 232 near Sutherlin-FA 3 near Sutherlin	1.69

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
234	Canyonville-Tiller	FA 3 at Canyonville-Tiller	23.51
238	Walton-Eugene	Walton-FA 3 in Eugene	27.13
239	Yoncalla-Scotts Valley	FA 3 near Yoncalla-Scotts Valley	8.09
240	Sutherlin-Nonpareil	FA 3 in Sutherlin-Nonpareil	10.04
241	Roseburg-Cleveland	FA 3 in Roseburg-Cleveland	12.47
243	Azalea-Anchor	FA 3 at Azalea-Anchor	6.30
244	Riddle	FA 3 near Myrtle Creek-Riddle	2.83
245	Glendale	FA 3 north of Glendale-Glendale	11.25
246	Empire-Coos Bay	FAS 263 near Empire-FA 2 in Coos Bay	3.55
247	Powers	Powers-FA 14 near Myrtle Point	18.62
248	Lakeside	Lakeside-FA 2 near Lakeside	1.01
249	Jordan Point	FA 2 near Jordan Point-Jordan Point	2.70
250	Coquille-Fairview	State Highway No. 9 in Coquille-Fairview	9.01
251	Myrtle Point-Coquille	FA 14 at Myrtle Point-FA 14 near Coquille	13.36
252	Myrtle Point-Gravelford	FA 14 at Myrtle Point-Gravelford	8.17
253	North Umpqua	FA 3 in Roseburg-Rock Creek	22.27
255	Enegren Ferry-Delwood	FAS 262 at Enegren Ferry-Delwood	7.78
256	Port Orford	FA 2 at Port Orford-U. S. Coast Guard Station	0.79
257	Sixes-Dry Creek	FA 2 at Sixes-County Road at Dry Creek	5.19
258	Gold Beach-Bagnall Ferry	FA 2 at Gold Beach-Bagnall Ferry	4.78
259	North Side Chetco River	FA 2 at Brookings-County Road near Mill Creek	5.80
260	Oregon Caves	FA 17 at Cave Junction-Oregon Caves National Monument	19.70
261	Rogue River Loop	FA 17 near Wilderville-FA 3 in Grants Pass	22.93
262	Coos River	FA 2 near Coos Bay-county road near Allegany	18.86
263	Cape Arago	Cape Arago State Park-FA 2 in North Bend	14.25
264	Grants Pass-West	FAS 261 West of Grants Pass-FAS 261 near Grants Pass	4.84
265	Merlin-Hugo	FA 3 near Grants Pass-FA 3 near Hugo	11.61
266	Wilderville-Grants Pass	FA 17 at Wilderville-FAS 280 near Grants Pass	9.76
267	Holland Loop	FAS 260 near Cave Junction-FAS 260 north of Holland	7.96
268	Medford-Provolt	FAS 280 at Provolt-FA 3 in Medford	25.42
269	Crater Lake	FA 3 near Medford-Crater Lake National Park	66.60
271	Sams Valley	FA 3 in Gold Hill-FAS 269 near Trail	15.03
273	Medford-Sams Valley	FA 3 near Medford-FAS 271 in Sams Valley	12.06
274	Jacksonville-Central Point	FAS 268 in Jacksonville-FAS 269 north of Medford	9.54
276	Rogue River-Wimer	FA 3 at Rogue River-county road at Wimer	8.06
277	Dead Indian	FA 15 near Ashland-county road near Frog Creek	6.58
278	Phoenix-Voorhies	FA 3 in Phoenix-FA 3 near Medford	3.00
230	Williams	County road near Williams-FA 3 near Grants Pass	23.13
287	Butte Falls	FAS 269 south of Trail-Butte Falls	15.67
288	Little Butte	FAS 269 in Eagle Point-Lakecreek	11.43
300	Odell	FAS 115 near Odell-FAS 356 near Van Horn	3.51

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
301	Schenck Corner-Van Horn	FAS 300 near Odell-FAS 115 near Van Horn	1.92
302	Cider Mill-Rockford	County road near Oak Grove-FA 1 near Hood River	4.61
303	Windmaster Corner-Oak Grove	FAS 302 in Oak Grove-FAS 356 near Hood River	2.10
305	Odell School-Fikes Crossing	FAS 356 near Summit-FAS 300 near Odell	2.04
306	Dee-Lost Lake Road	FAS 356 at Dee-county road southwest of Dee	2.25
307	Sherars Bridge	FA 4 near Tygh Valley-FA 12 at Grass Valley	28.63
308	Shaniko-Fossil	FA 12 at Shaniko-FA 6 in Fossil	43.65
309	Mill Creek-The Dalles	County road near Mill Creek-FAS 365 in The Dalles	8.23
310	Dufur-Atkinson Ranch	FA 4 at Dufur-FA 4 near Boyd	5.08
311	Pinehurst School-Tygh Valley	County road near Pinehurst School-FA 4 at Tygh Valley	7.37
312	Bakeoven Road	FA 4 at Maupin-county road east of Maupin	5.06
313	Rufus-Scott Canyon	FA 1 at Rufus-Klondike Junction	2.91
314	Willowdale-Ashwood	FA 4 near Willowdale-county road in Ashwood	12.00
316	Service Creek-Mitchell	FA 5 at Michell-FA 6 at Service Creek	24.85
317	Hardman	FAS 378 southwest of Heppner-county road southeast of Hardman	14.98
318	Waterman-Spray	County road at Waterman-FA 6 at Spray	13.00
319	McKenzie-Bend	FA 4 near Bend-FA 5 near Sisters	20.07
320	O'Neil	FA 4 at Prineville Junction-FA 5 at Prineville	17.81
321	Crooked River	County road southeast of Prineville-FA 5 in Prineville	21.50
322	Terrebonne-O'Neil	FA 4 at Terrebonne-FAS 400 west of Prineville	4.86
324	Cline Falls	FAS 319 at Tumalo-FA 5 near Cline Falls	10.13
325	Tumalo-Deschutes	FAS 324 at Tumalo-county road at Deschutes	4.18
326	Redmond-Bend	FAS 319 near Bend-FA 4 at Redmond	13.53
327	Cloverdale-South	FAS 319 near Sisters-FA 5 at Cloverdale	4.50
329	Gerking	FAS 319 near Tumalo-north to county road	2.30
330	Carroll Acres-Southeast	FA 4 near Bend-southeast to county road	2.53
356	Hood River	FAS 115 near Parkdale-FA 1 in Hood River	17.28
365	Chenoweth Creek	FA 1 in The Dalles-county road near Chenoweth Creek	3.59
369	Petersburg-Fairbanks	FA 4 near Petersburg-county road at Fairbanks	5.92
378	Wasco-Heppner	FA 1 near Sherman-FAS 439 at Heppner	100.17
385	Madras-Prineville	FA 5 in Prineville-FA 4 near Madras	26.39
390	Fossil-Kinzua	FA 6 near Fossil-county road near Kinzua	7.06
395	Lower Bridge-Terrebonne	County road near Lower Bridge-FA 4 near Terrebonne	6.28
397	Bend-Butler Ranch	FA 21 in Bend-FAS 398 east of Bend	8.33

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
398	Alfalfa	FA 21 near Bend-county road near Alfalfa	10.35
400	Long Pine School	FAS 320 near O'Neil-one mile south of Jefferson county line	4.20
401	Prineville-McKay Creek	FA 5 in Prineville-Upper McKay Creek	9.00
402	Prineville-Davis Ranch	FAS 403-FA 5 Prineville	16.63
403	Paulina	FAS 402-Paulina	39.53
404	Powell Butte	FA 5 west of Powell Butte-FAS 542 south of Powell Butte	5.72
405	Lakeview-Burns	FA 16 at Valley Falls-FA 21 at Okerman Ranch	90.10
406	Warner Valley	FA 16 near Lakeview-Plush	46.21
407	West Side	County road near West Side-FA 410 west of Lakeview	8.05
408	Cottonwood Creek	FAS 410 west of Lakeview-FAS 407	6.75
410	Klamath Falls-Lakeview	FA 4 in Klamath Falls-FA 16 in Lakeview	95.81
411	Maddox Corner-Thomas Creek	FAS 410 west of Lakeview-north to Thomas Creek	5.29
414	Fort Rock	FA 16 west of Fort Rock-Fort Rock	6.73
416	Dairy-Bonanza	FAS 410 at Dairy-FAS 430 at Bonanza	6.97
417	Bonanza-Malin	FAS 419 west of Malin-FAS 416 in Bonanza	14.88
418	Bonanza-Lorenz Mill	FAS 416 in Bonanza-FAS 410 at old Lorenz Mill	7.80
419	Klamath Falls-Malin	FAS 410 east of Klamath Falls-Oregon-California line	27.09
420	Klamath Lake	FAS 4 in Klamath Falls-FAS 541 at Fort Klamath	50.21
421	Chiloquin-Southwest	FAS 541 near Lobert-FAS 424 at Chiloquin	2.96
422	Malone	FAS 419 east of Merrill-Oregon-California line	1.75
423	Hatfield	FAS 419 east of Merrill-Oregon-California line	2.51
424	Klamath Agency-Chiloquin	FAS 541 south of Klamath Agency-Chiloquin	4.43
425	Modoc Point	FA 4 at Modoc Point-FAS 541 south of Klamath Agency	12.90
427	Midland	FA 33 north of Midland-FAS 410 at Altamont	5.79
428	Lower Klamath	FA 33 south of Midland-FAS 419 west of Dehlinger	7.02
429	Sprague River	Sprague River-FAS 410 west of Beatty	9.30
430	Bonanza-Langell Valley	FAS 417 south of Bonanza-Lorella-FAS 416 in Bonanza	19.20
431	Olene-Poe Valley	FAS 410 near Olene-FAS 417 south of Bonanza	9.62
432	Keno-Worden	FA 33 near Worden-FA 15 at Keno	7.67
433	Hermiston	FAS 443 west of Echo-FAS 462 in Hermiston	10.48
434	Altamont-Mock Corner	FAS 428, 3 miles west of Dehlinger-FAS 427 at South Klamath	6.08
437	Kimberly-Long Creek	FA 6 at Kimberly-3 miles east of Malheur National Forest Boundary	45.46
439	Heppner	FA 1 at Heppner Junction-FA 30 at Nye	84.37
440	Mikkalo	FA 6 near Olex-Mikkalo	2.22
441	Lonerock	Lonerock-FAS 378 east of Condon	16.49
443	Lexington-Echo	FAS 439 at Lexington-FA 1 east of Echo	39.36

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
444	Morgan Ranch-Ione	Morgan Ranch-FAS 439 at Ione	9.31
447	John Day-Burns	FA 31 north of Burns-FA 5 in John Day	68.11
448	Austin Spur	FA 5 south of Austin-Austin	2.69
449	Beech Creek	FA 5 at Mt. Vernon-FA 30 northwest of John Day	5.35
450	Frenchglen	FAS 457 east of Burns-Frenchglen	62.00
452	Prarie City-Blue Mountain Springs	FA 5 in Prairie City-Blue Mt. Springs	11.85
453	Logdell	Logdell-FAS 447 north of Seneca	8.01
454	Hermiston-Cold Springs	FAS 462 in Hermiston-FA 18 near Cold Springs	7.30
455	Rome-Princeton	FAS 456 north of Princeton-FAS 513 near Rome	61.71
456	Diamond Valley	FAS 457 near Crane-FAS 450 at Grain Camp	48.06
457	Burns-Crane	FA 21 in Burns-Crane	28.91
458	Drewsey	FA 31 south of Drewsey-Drewsey	2.60
459	Silvies River	FA 31 in Burns-Silvies River	4.48
461	Pendleton-Cold Springs	FA 1 in Pendleton-FA 18 at Cold Springs	30.88
462	Stanfield-McNary Dam	FA 1 south of Stanfield-FA 18 near McNary Dam	11.97
463	Ordnance Depot	FA 1 south of Ordnance-Ordnance Depot	0.41
464	Umapine	FA 19 north of Freewater-Oregon-Washington line north of Umapine	7.25
465	Athena-West	FA 19 in Athena-FAS 467, 2 miles south of Helix	7.98
466	Myrick	FAS 461 southeast of Holdman-FAS 467, 3 miles south of Helix	8.46
467	Havana-Stanton	Half mile north FA 19 at Havana-Stanton	14.43
468	Pendleton-Airport	FA 1 near Pendleton-Pendleton Airport	1.36
469	Weston-Elgin	FA 19 at Weston-FA 7 at Elgin	41.39
470	Stanfield-Pendleton	FA 1 south of Stanfield-FA 1 near Pendleton	24.65
471	Milton-South Fork Walla Walla River	FA 19 in Milton-Power Plant	6.77
472	Cayuse-Adams	FAS 473 at Cayuse-FA 19 at Adams	15.29
473	Mission-Adams	FA 1 near Mission-FA 19 at Adams	12.93
474	Thorn Hollow-Athena	FAS 472 southeast of Adams-FA 19 at Athena	8.02
475	Thompson Ranch-Mission	Thompson Ranch-FA 1 near Mission	5.90
477	Starkey	Starkey-FA 1 near Hilgard	17.00
478	Mt. Glen	FA 7 in La Grande-FAS 481 north of Island City	7.42
479	Lower Cove	FA 7 south of Alicel-Grande Ronde River	5.88
480	Enterprise-Wallowa Lake	FA 7 in Enterprise-south end Wallowa Lake	12.67
481	Island City-Imbler	FA 7 at Island City-Summerville-FA 7 at Imbler	20.55
482	Little Sheep Creek	FAS 480 in Joseph-Imnaha	30.42
483	Cove	FAS 7 at Island City-Cove-FA 1 at Union	22.16
484	Alder Slope	County road south of Enterprise-FAS 480 in Enterprise	4.03
485	Zumwalt	FAS 480 north of Joseph-Crow Creek Road Junction	5.28

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
486	Medical Springs	FAS 505 near Baker-FA 1 in Union	42.67
487	Whiskey Creek	FA 7 in Wallowa-Junction with county road northeast of Wallowa	7.19
488	North Powder River	FAS 503 northwest of Haines-FA 1 in North Powder	4.90
489	Whiskey Creek-Lostine	FAS 487 east of Wallowa-FA 7 in Lostine	7.88
490	Flora	FA 7 in Enterprise-Oregon-Washington line	45.28
491	Wallowa-Johnson Ranch	FA 7 in Wallowa-FA 7 northwest of Wallowa	3.46
497	Hurricane Creek	FAS 480 in Joseph-FAS 480 in Enterprise	7.38
500	Robinette	FAS 505 east of Richland-Brownlee	11.00
501	Baker-Unity	FA 5 north of Unity-FA 1 in Baker	46.41
502	Sumpter	Sumpter-FAS 501 at Salisbury	19.17
503	Haines-Anthony	FA 1 near Haines-Anthony Creek	11.30
504	Pine Creek	FAS 505 in Halfway-Long Branch Creek	3.72
505	Baker-Cornucopia	FA 1 in Baker-Cornucopia	71.99
506	Baker-Pine Creek-Wingville	FA 1 in Baker-Pine Creek-Wingville-FA 1 northwest of Baker	13.44
507	Rock Creek	FA 1 in Haines-Rock Creek-FAS 503 west of Haines	9.20
508	Muddy Creek	FAS 503 northwest of Haines-FAS 507 north of Rock Creek	3.83
509	Keating	FAS 505 south of Keating-Keating	3.36
510	New Bridge	FAS 505 at Richland-New Bridge	2.41
511	Richland-South	FAS 505 at Richland-Daly Creek	3.54
512	Halfway-North	FAS 505 at Halfway-East Pine Creek	3.34
513	I. O. N.	Oregon-Nevada line at McDermitt-Oregon-Idaho line north of Jordan Valley	117.87
514	Cario-Nyssa	Oregon-Idaho line at Nyssa-FA 5 at Cairo	8.64
515	East Cow Hollow	FAS 518 at Owyhee-East Cow Hollow	7.42
516	Weiser Spur	FA 1 south of Weiser-Oregon-Idaho line at Weiser	1.99
517	Payette Spur	Oregon-Idaho line at Payette-FA 1 north of Payette	1.67
518	Nyssa-Homedale	Idaho line 9 miles south of Adrian-FAS 514 in Nyssa	22.90
519	Graham Boulevard	FA 31 south of Hope-FA 31 in Vale	10.72
520	Adrian-Parma	FAS 518 near Adrian east to Oregon-Idaho line	2.77
523	Harper Loop	FAS 525 at Harper-FAS 525 south of Harper	6.20
524	Jordan Valley	FAS 513 west of Jordan Valley-FAS 513 north of Jordan Valley	10.43
525	Harper-Little Valley	FA 31 south of Harper-FA 31 southeast of Little Valley	8.93
527	Cox Corner-Ontario	FA 5 west of Cairo-FA 5 near Ontario	6.76
528	Morgan Avenue-Ontario	FA 514 south of Cario-FA 5 in Ontario	6.51
529	Nyssa-Morgan Avenue	FAS 514 at Nyssa-Morgan Avenue south of Cairo	6.10
530	Enterprise Avenue	FAS 515 in East Cow Hollow-FAS 518 south of Nyssa	3.90
532	Oregon Trail School-Lapine Corner	FAS 515 in Cow Hollow-FAS 518 near Kingman	2.30

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
533	Rock Spring Canyon	Road junction north of Mitchell Butte-FAS 515 west of Owyhee	4.00
535	Oregon Slope	FA1, 5 miles north of Payette Junction-FA 1, 3 miles north of Payette Junction	3.70
536	Ironside-South	FA 5 at Ironside-South Fork Willow Creek	3.67
537	Juntura-Beulah	FA 31 at Juntura-Beulah	14.34
539	Sun Mountain	FA 4 east of Crater Lake-FAS 541 near Ft. Klamath	26.98
540	Adrian-Idaho	FAS 520 east of Adrian-southeast to Oregon-Idaho line	4.42
541	East Crater Lake	Crater Lake National Park-FA 4 near Lobert	20.20
542	Butler Ranch-Powell Butte	FAS 397 at Butler Ranch-FAS 404 south of Pilot Butte	9.48
544	Island City-South	FA 7 in Island City south to FA 1	2.90
601	Nehalem	FA 2 in Astoria-FA 27 near Buxton	74.86
602	Warrenton-Ft. Stevens	FA 2 in Warrenton-Ft. Stevens	4.53
603	Fishhawk Falls	FA 27 near Elsie-FAS 601 west of Jewell	5.86
604	Mist-Clatskanie	FAS 601 at Mist-FA 1 at Clatskanie	11.90
605	Warrenton-Chapman Street	FA 2 in Warrenton-FAS 602 in Warrenton	1.62
606	Elsie-Jewell	FA 27 near Elsie-FAS 601 at Jewell	8.91
608	Youngs Bay-Melville	Melville-FA 2 near Astoria	7.92
609	Pittsburgh-Scappoose	FAS 601 at Pittsburg-FA 1 at Scappoose	19.79
610	Ingils-Mayger	FA 1 near Quincy-Mayger	4.64
612	Treharne-Sunset Camp	FA 27 at Sunset Camp-FAS 601 at Treharne	10.50
614	Little Nestucca	FA 2 near Cloverdale-FA 11 at Dolph	9.54
615	Miami-Barnsdale School	FA 2 near Garibaldi-Barnsdale	7.07
616	Netarts	Oceanside-FA 2 at Tillamook	9.15
618	Hemlock-Sand Lake	Sand Lake-FA 2 at Hemlock	5.52
619	Peltz Corner-Trask River	FA 2 near Tillamook-FAS 620	2.00
620	Fairview-Clements Corner	FA 2 south of Tillamook-FA 35 east of Tillamook	5.45
621	Coast Highway-Pacific City-Woods	FA 2 south of Cloverdale-Woods	3.57
622	Beaverton-Aurora	FA 3 at Aurora-FAS 625 at Beaverton	20.81
623	Nehalem	FA 27 near Davies-FA 32 at Forest Grove	9.58
624	Forest Grove-Balm Grove	FA 32 at Forest Grove-FA 35 near Gales Creek	10.65
625	Beaverton-Hillsdale	FA 32 at Beaverton-FA 9 in Portland	6.72
626	Farmington	FAS 650 south of Hillsboro-FAS 622 in Beaverton	9.89
627	Scholls	FAS 650 at Scholls-FAS 625 near Beaverton	12.40
629	Hillsboro-North Plains-Shadybrook	FA 32 in Hillsboro-Shadybrook	8.55
631	Cornelius-Blooming	1 mile south of Blooming-FA 32 at Cornelius	3.70
632	Hillsboro-Cornelius Pass	FA 32 in Hillsboro-FA 1 near Burlington	13.70
633	Hillsboro-Farmington-North Scholls	FAS 627 near North Scholls-FA 32 near Hillsboro	8.05
634	Six Corners-Sherwood-Tualatin	FA 9 at Six Corners-FAS 622 at Tualatin	5.12

TABLE V—Continued

F. A. S. No.	Name	Terminal	Length in Miles
635	Cedar Mill	FA 27 near Orenco-FA 1 in Portland	8.56
637	Sun Dial	FA 1 east of Fairview-Aluminum Plant	1.25
638	N. E. Glisan Street	FA 41 in Portland-Base Line Road south of Troutdale	9.70
639	S. E. Foster Road	FAS 129 at Damascus-FA 41 in Portland	8.93
643	Sauvies Island (West Side)	FA 1 south of Burlington-FAS 644 east of Burlington	2.50
644	Sauvies Island (Central)	FAS 643 east of Burlington-FAS 643 south of Burlington	10.40
645	Sauvies Island (Oak Island)	FAS 644 east of Burlington-north end Little Sturgeon Lake	3.06
650	Hillsboro-Newberg	FA 9 in Newberg-FA 32 in Hillsboro	20.35
		Total	4,473.58

Bridge over Breitenbush River over the new route of the North Santiam Highway in Marion County.

Federal Aid Urban Highways: By provision of the Federal Aid Highway Act of 1944, whereby federal aid primary highways within "urban areas" were set up as an "Urban Federal Aid Highway System" and made eligible to have expended on them federal aid funds of a class designated "Urban Federal Aid Funds." An urban area, as defined in the act, is an area included and adjacent to a municipality or other urban place having a population of 5,000 or more according to the latest available federal census. The boundaries of the urban area for each place of 5,000 or more are to be as fixed by the State Highway Department subject to the approval of the Bureau of Public Roads.

In Oregon, there are 24 cities of populations 5,000 or more. Accordingly there are 24 urban areas. The boundaries of these areas as at present fixed by the Highway Department are in most cases the same as corporate limits of the cities. The mileage of federal aid primary highways within the 24 areas is 153.39. Thus the mileage of federal aid urban highways in Oregon is 153.39. The areas and their respective mileages of federal aid urban highways, are as follows:

Albany	2.83	Lebanon	1.53
Ashland	3.46	McMinnville	2.27
Astoria	6.16	Medford	2.25
Baker	3.94	Milwaukie	0.57
Bend	4.41	North Bend	2.80
Coos Bay	2.46	Oregon City	2.64
Corvallis	6.19	Pendleton	6.42
Eugene	5.97	Portland	77.75
Grants Pass	1.80	Roseburg	1.12
Hillsboro	1.78	Salem	7.73
Klamath Falls	3.09	Springfield	2.24
La Grande	2.04	The Dalles	1.94
		Total	153.39

Federal funds allotted to Oregon for use on federal aid urban highways are as follows:

Fiscal year 1946	$ 810,873
Fiscal year 1947	810,873
Fiscal year 1948	800,477
Fiscal year 1949	None
Fiscal year 1950	720,430
Fiscal year 1951	720,430
Fiscal year 1952 (approx.)	1,115,000

Public Lands Highways: Public Lands Highways are highways or parts of highways which, because of their being on unappropriated and unreserved public lands, Indian reservations or other federal reservations, are eligible to have Public Lands Highway funds expended upon them. No definite system has been designated for this class of highways, but to date use of the Public Lands Highways funds has been confined in large part to the Warm Springs Highway across the Warm Springs Indian Reservation and the I. O. N. Highway in Malheur County.

Federal funds allotted to Oregon for use on federal lands highways during the fiscal years 1939 to 1943 were as follows:

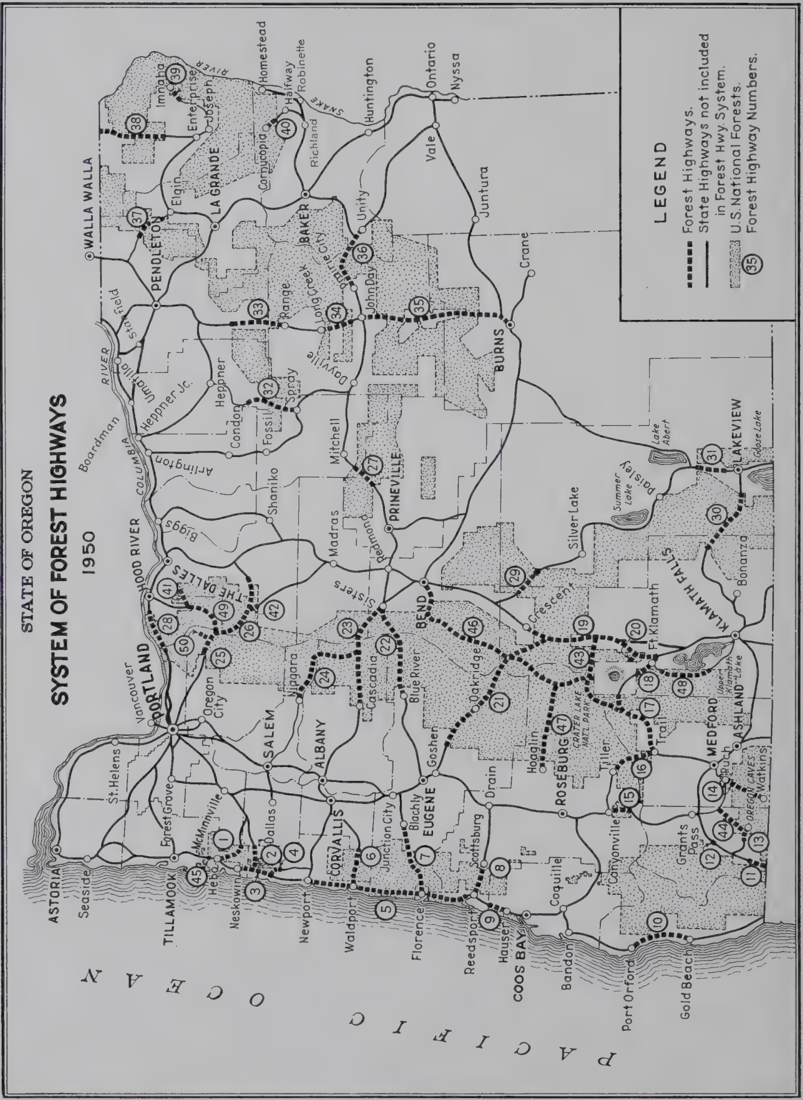
Fiscal year 1939	$167,394
Fiscal year 1940	60,542
Fiscal year 1941	129,201
Fiscal year 1942	96,839
Fiscal year 1943	99,100

No funds of this class were made available for the fiscal years 1944 to 1950, inclusive, but in the Federal Aid Highway Act of 1950, authorizations were made in the amount of $5,000,000 for each of the fiscal years 1951 and 1952. Unlike the authorizations of previous years, these authorizations are not to be allotted to states in accordance with a formula. They are, instead, to be expended in the public land states "on the basis of need as determined by the Commissioner of Public Roads

Surfacing operations, relocated section of Ochoco Highway, U. S. 28, Wheeler County.

upon application of the highway departments of the respective states." The amounts to be expended in Oregon under these authorizations are therefore unknown as of the present time.

Federal Forest Highways: The Federal Forest Highway System comprises such main highways within or near national



forests as have been designated by the Federal Forest Service, the Bureau of Public Roads and the State Highway Commission for improvement with federal forest highway funds. A list of the highways included in this system is given in Table VI.

Construction work financed with Forest Highway funds is contracted and supervised by the Bureau of Public Roads. However, the Highway Commission has a voice in the selection of the projects to be undertaken, and in matters of location and standards of construction.

Federal funds authorized for use on Forest Highways during each of the four fiscal years 1950 to 1953, inclusive, are in the amount of $20,000,000. Oregon's share of each is approximately $2,750,000.

County Roads: County roads are those roads, control of which, and responsibility for which, rests with the counties by and through the respective county courts or county commissions. They comprise those roads in the state which are not a part of either the state highway system or the systems of roads over which control is held by the federal government by reason of their being located in national forests, national parks and Indian reservations.

County roads constitute about 65 per cent of all roads in the state. The total mileage is 32,566. Of them, 1,351 miles are in the federal aid secondary highway system.

Funds with which county roads are improved and maintained come from the following sources:

1. Property taxes.
2. Road-user fees and taxes, including motor vehicle license fees, gasoline tax, motor transportation fees and fines for traffic law violations.
3. Federal aid.

Of the road-user fees and taxes collected within the state, 19 per cent is allotted to counties for use on their county roads. In 1950, this 19 per cent will amount to approximately $7,435,000.

Of those of the county roads which are on the federal aid secondary highway system (1,351 miles) are eligible to have federal aid funds expended upon them. Allotments of this class of funds to county roads for the fiscal years 1950 and 1951, inclusive of state funds required to match the federal share, will total $1,490,000.

Expenditures made by counties, on county roads, during the year 1949, as reported to the Highway Commission by county officials, total $14,745,140.

TABLE VI

Oregon Forest Highway System

Forest Road No.	State No.	Name	Termini	Length in Miles
1	32	Three Rivers	Hebo-East Forest Boundary	13.9
2	39	Salmon River	Oregon Coast Highway-Polk County Line	13.7
3	9	Oregon Coast	Neskowin-Siletz River	22.8
4	181	Siletz	Oregon Coast Highway-Forest Boundary	6.0
5	9	Oregon Coast	Yaquina Bay-Umpqua River	68.7
6	27	Alsea	Waldport-Benton County Line	28.4
7	34	Siuslaw	Oregon Coast Highway-Blachly	45.1
8	45	Umpqua	Reedsport-Scottsburg	15.6
9	9	Oregon Coast	Douglas County Line-Hauser	9.7
10	9	Oregon Coast	Port Orford-Gold Beach	31.3
11	25	Redwood	O'Brien Schoolhouse-State Line	5.4
12	25	Redwood	Summit Hayes Hill-Love Station	2.0
13	38	Oregon Caves	3 miles west of Forest Boundary to Caves	11.5
14	....	Applegate (county road)	Ruch-Watkins	17.0
15	1	Pacific	Canyonville-2¾ miles south of Forest Boundary	11.0
16	230	Tiller-Trail	Tiller to Trail	26.3
17	22	Crater Lake	Trail-Park Boundary	44.0
18	22	Crater Lake	Park Bdry. to Sun Mountain Highway	7.7
19	*	Dalles-California	Crescent to Crater Lake Highway	57.8
20	424	Sand Creek	Sun Mountain Highway-Park Boundary	4.3
21	18	Willamette	Lowell to Dalles-California Highway	73.3
22	15	McKenzie	Blue River to Sisters	51.2
23	16	Santiam	1 mile east of Foster to Sisters	69.5
24	162	North Santiam	Niagara-Santiam Highway	44.6
25	26	Mount Hood	West Forest Boundary to Wapinitia Jct.	15.4
26	44	Wapinitia	Mt. Hood Highway to 1 mile north of Wapinitia	32.6
27	41	Ochoco	West Forest Boundary to North Forest Boundary	19.6
28	2	Columbia River	West Forest Boundary to East Forest Boundary	27.3
29	19	Fremont	West Forest Boundary to East Forest Boundary	16.2
30	20	Klamath Falls-Lakeview	West Forest Boundary to East Forest Boundary	29.4
31	19	Fremont	4 miles south of Valley Falls to 6 miles north of Lakeview	13.0
32	321	Heppner-Spray	Mouth of Chapin Creek to John Day Highway	26.3
33	28	Pendleton-John Day	2½ miles northwest of Albee to Range	30.7
34	28	Pendleton-John Day	Long Creek-South Forest Boundary	20.4
35	**	John Day-Burns	John Day-Burns	70.2
36	5	John Day	Prairie City-Unity	42.6

TABLE VI—Continued

Forest Road No.	State No.	Name	Termini	Length in Miles
37	330	Weston-Elgin	McDougall's Camp to Summerville-Elgin Road	23.2
38	11	Enterprise-Lewiston	State Line to South Forest Boundary	30.3
39	350	Little Sheep Creek	West Forest Boundary to Imnaha	8.8
40	413	Baker-Cornucopia	Carson to Cornucopia	5.0
41	....	Loop Dalles (county road)	Mt. Hood Highway to East Forest Boundary	15.0
42	53	Warm Springs	Wapinitia Highway to Forest Boundary	6.9
43	†	Diamond Lake	Union Creek to Dalles-California Highway via Diamond Lake	38.9
44	‡	Williams Creek	Provolt to Oregon Caves Highway	20.0
45	9	Oregon Coast	North Forest Boundary to South Forest Boundary between Beaver and Hebo	1.1
46	§	Cascade Lakes	North Boundary of Crater Lake Park to Bend	101.0
47	....	North Umpqua	Rock Creek to Cascade Lakes Highway	60.0
48	421	Klamath Lake-West Side	Seven Mile Creek to Forest Boundary southeast of Odessa Creek	20.0
49	26	Mount Hood	Wapinitia Junction-North Forest Boundary	21.5
50	....	Timberline	Mt. Hood Highway Junction to Timberline Lodge	5.6
			Total mileage on Forest Highway System	1,381.8
			Mileage on State System	1,187.5

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* Includes 30.8 miles on Highway 4 and 27.0 miles on Highway 428.

** Includes 67.0 miles on Highway 48 and 2.5 miles on Highway 7.

† State Secondary Highways 233 and 425.

‡ Includes 7.2 miles on State Secondary Highway 261.

§ Includes 17.1 miles on State Secondary Highway 232 and 372.

John Day Highway west of Unity, Baker County, reconstructed in 1949.

FINANCES

Sources of State Highway Income

Moneys used by the State Highway Commission in the improvement, maintenance and operation of highways and parks come from two general sources: (1) State funds, consisting principally of the Commission's share of the motor vehicle revenues collected by the State, and (2) Federal funds coming to the State in the form of federal aid. Some additional moneys are received as cooperation from counties and other agencies, but the amounts of these are small.

The state funds above referred to are derived almost entirely from road-user taxes and fees as follows:

1. Gasoline tax.
2. Diesel fuel tax.
3. Motor vehicle license fees and operators fees.
4. Motor transportation fees.
5. Fines for traffic law violations.

Of the revenues yielded by these taxes and fees, 19.0 per cent is allotted to the counties for use on county roads, and 10.0 per cent is allotted to the cities for use on city streets. From these revenues, also, an additional amount approximating 2.5 per cent is appropriated by the state legislature for use by the State Police Department. The remaining 68.5 per cent is placed at the disposal of the State Highway Commission for use on highways and parks.

Table VII shows in dollars and cents how the road-user revenues of the past several years have been shared between the counties, the cities, the State Police and the State Highway Commission.

Table VIII combines the State Highway Commission's income from road-user revenues with other state fund income and with federal aid and other cooperative income, to give the Commission's total income and to show the trends in that income during the period 1941 to 1952.

TABLE VII

Distribution of Road-User Revenues as Between Counties, Cities, State Police and Highway Commission 1941 to 1952

Year	Total Revenue (after deduction of refunds and collection expense)	Amounts Paid During Calendar Year			
		To Counties	To Cities	To State Police	To Highway Commission
1941	$17,835,937.73	$2,410,961.39	$	$ 341,097.47	$15,083,878.87
1942	16,605,266.39	2,815,071.90	....	344,252.46	13,445,942.03
1943	14,738,561.68	2,612,415.69	....	390,898.76	11,735,247.23
1944	15,140,109.85	2,311,568.60	736,168.35	380,662.52	11,711,710.38
1945	16,734,157.53	2,340,748.48	745,461.30	428,111.75	13,219,836.00
1946	22,386,469.72	2,598,427.65	827,524.73	338,708.71	18,621,808.63
1947	26,909,331.93	5,318,951.55	1,116,720.52	766,460.09	19,707,199.77
1948	28,649,923.93	5,078,975.14	2,663,328.79	1,035,763.45	19,871,856.55
1949	30,633,221.29	6,677,113.29*	4,108,624.45	1,034,746.51	18,812,737.04
1950 (Est.)	42,014,000.00	7,443.000.00	3,617,000.00	1,018,000.00	29,936,000.00
1951 (Est.)	41,515,000.00	7,885,000.00	4,150,000.00	1,018,000.00	28,462,000.00
1952 (Est.)	42,715,000.00	8,110,000.00	4,270,000.00	1,018,000.00	29,317,000.00

* Includes loans to counties in the amount of $1,119,237.78.

The recovery in income which followed termination of World War II was remarkably rapid. By 1948, the income from motor vehicle taxes and fees had mounted to $28,649,923 as compared with the 1941 income of $17,835,937, the highest for any of the prewar years. Of this increace of $10,813,986, the counties and cities received $5,331,343. The Highway Commission benefited to the extent of $4,787,977. The remaining $694,666 went to the State Police Department.

During the period, from 1948 to 1951, the annual income from motor vehicle taxes and fees is expected to increase from $28,649,923 in 1948 to $41,515,000 in 1951. As nearly as can be determined, this increase of $12,865,077 comprises the following items:

1¢ increase in gasoline tax	$ 4,550,000
$5 increase in registration fees paid by automobiles and pick-ups	3,175,000
Net increase in registration fees and P. U. C. fees paid by trucks	1,500,000
Normal increase in revenues due to increasing number of vehicles	3,640,077
	$12,865,077

TABLE VIII

Incomes to Highway Commission From All Sources 1941 to 1952

Year	Road-User Revenues	Other State Sources	Federal Cooperative Funds	Other Cooperative Funds	Total Income
1941	$15,083,878.87	$ 9,758.70	$2,810,894.93	$ 69,291.05	$17,973,823.55
1942	13,445,942.03	4,796.42	2,273,616.82	22,418.46	15,746,773.73
1943	11,735,247.23	2,907.87	4,341,584.26	34,050.00	16,113,789.36
1944	11,711,710.38	3,274.01	3,108,858.22	38,662.71	14,862,505.32
1945	13,219,836.00	4,333.64	2,290,000.27	2,411.01	15,516,580.92
1946	18,621,808.63	59,344.66	2,339,091.54	1,935.08	21,022,179.91
1947	19,707,199.77	76,554.92	6,771,812.00	38,621.33	26,594,188.02
1948	19,871,856.55	298,824.66	6,180,173.46	51,041.04	26,401,895.71
1949	18,812,737.04	419,032.12	6,555,119.04	341,113.28	26,128,001.48
1950 (Est.)	29,936,000.00	939,000.00	6,000,000.00	562,000.00	37,437,000.00
1951 (Est.)	28,462,000.00	839,000.00	7,500,000.00	820,000.00	37,621,000.00
1952 (Est.)	29,317,000.00	416,000.00	7,700,000.00	500,000.00	37,933,000.00

Of the increase of $12,865,077 as between the incomes of 1948 and the estimated income of 1951, the counties and cities will receive 29 per cent (approximately $3,730,000) and the Highway Commission will receive 71 per cent or approximately $9,135,000.

In the ten years intervening between 1941 and 1951, the annual income of the Highway Commission, inclusive of federal aid, has increased from $18,000,000 to $37,600,000, an increase of 109 per cent. This appears to be, and is, a very considerable increase. However, when figured in buying power, today's $37,600,000 is about the equivalent of the buying power of $22,600,000 in 1941. Thus, in buying power, the increase in income during the 10-year period figures only 25.6 per cent. During the same time, the traffic to which the state highway system is subjected has increased 60 per cent.

Incomes 1949 and 1950

Detailed statements of the income received during the calendar years 1949 and 1950 appear in Tables IX and X.

While gross receipts of state funds during 1949 were $2,300,000 above those of 1948, the balance remaining for use on state highways after subtracting the shares of the counties, cities and State Police was $730,000 less than in 1948. This was due to the cities having received an extra $1,200,000 through a change in the time payment made to them and due to loans totaling $1,119,238 having been made to counties from the Highway Commission's share of the funds as required by legislative action. Without these unusual situations, the Highway Commission would have received approximately $1,600,000 more in 1949 than in 1948 instead of $730,000 less.

Gross receipts of 1950 are expected to exceed those of 1949 by some $11,900,000. Of this increase, approximately $9,000,000 will come from the increases in gasoline tax and registration fees authorized by the legislature in 1949 to become effective in 1950.

The State Highway Commission's share of the gross receipts of state funds are expected to be $30,875,000 in 1950 as compared with $19,231,769 in 1949. Of this increase of $11,643,000, $2,300,000 is accounted for by the abnormally low receipts of 1949, $6,400,000 is the State's share of the increase in revenue resulting from the increased rates of gasoline tax

TABLE IX

Income For Calendar Year 1949

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Collection Expense (Secretary of State and P. U. C.)	Net Amount for State Highways, State Police, Cities and Counties
State Funds			
Motor vehicle license fees	$ 4,583,130	$ 1,465,860	$ 3,117,270
Gasoline tax ($25,379,865 less $2,992,983 refunds)	22,386,882	106,325	22,280,557
Motor transportation fees	5,643,447	658,192*	4,985,255
Fines for traffic law violations	250,139		250,139
Contributions to cities withheld	375,000		375,000
Cash discounts	44,032		44,032
Subtotals	$33,282,630	$2,230,377	$31,052,253
Less $1,034,747 contributions to state police, $5,557,875 to counties, $4,108,624 to cities, and $1,119,238 loaned to counties			11,820,484
Net receipts of state funds for highway purposes			$19,231,769
Cooperative Funds			
Federal cooperative funds			$ 6,555,119
County cooperative funds			269,591
Miscellaneous cooperative funds			71,522
Subtotal, cooperative funds			$ 6,896,232
Total, all receipts			$26,128,001

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* Includes $90,074 transferred directly from the P. U. C. to the State Police.

and registration fees, $423,000 represents repayment of loans made to counties in 1949, and $241,000 is a refund received from the State Police Department. The balance of the increase is the State's share of the normal annual increase in gross revenues.

The total of funds available to the Highway Commission for expenditure during the two years 1949 and 1950 is $75,990,152. This amount comprises the following:

Unexpended balance carried over from 1948	$12,425,151
Receipts of State funds, 1949	19,231,767
Receipts of State funds, 1950	30,875,000
Receipts of Federal-aid funds, 1949	6,555,119
Receipts of Federal-aid funds, 1950	6,000,000
Receipts of other cooperative funds	903,115
Total	$75,990,152

TABLE X

Estimated Income for Calendar Year 1950

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Collection Expense (Secretary of State and P. U. C.)	Net Amount for State Highways, State Police, Cities and Counties
State Funds:			
Motor vehicle license fees	$11,975,000	$ 1,775,000	$10,200,000
Gasoline tax ($30,120,000 less $3,200,000 refunds)	26,920,000	120,000	26,800,000
Diesel fuel tax	22,000	8,000	14,000
Motor transportation fees	5,410,000	660,000	4,750,000
Fines for traffic law violations	250,000		250,000
Cash discounts	25,000		25,000
City allotment funds withheld	250,000		250,000
Receipts from counties to apply on loans	423,000		423,000
Refund of 1949 balance from state police	241,000		241,000
Subtotals	$45,516,000	$ 2,563,000	$42,953,000
Less $1,018,000 contribution to state police, $7,443,000 to counties, and $3,617,000 to cities			12,078,000
Net receipts of state funds for highway purposes			$30,875,000
Cooperative Funds:			
Federal cooperative funds			$ 6,000,000
County cooperative funds			275,000
City and miscellaneous cooperative funds			287,000
Subtotal, cooperative funds			$ 6,562,000
Total, all receipts			$37,437,000
Balance on hand beginning of year			$ 4,340,000

The large balance of funds carried over from 1948 is the then remaining portion of a balance of $18,000,000 accumulated during the war years when construction activities of the State were curtailed as a war emergency and when such construction as was done to meet the requirements of the war effort was paid for by the federal government. This balance is now exhausted.

Anticipated Incomes, 1951 and 1952

Assuming that the basis on which motor vehicle revenues are assessed to motor vehicle owners and distributed among governmental agencies is continued without change through 1951 and 1952, State Highway Department incomes for the years 1951 and 1952 should run about $37,621,000 and $37,933,000, respectively. These incomes contemplate that motor vehicle revenues will increase at a rate of three per cent per

TABLE XI

Anticipated Incomes for Calendar Years 1951 and 1952

Source of Income	1951	1952
State Funds:		
Motor vehicle license fees (net)	$ 8,700,000	$ 8,950,000
Gasoline tax (net)	27,600,000	28,400,000
Diesel fuel tax (net)	15,000	15,000
Motor transportation fees	4,950,000	5,100,000
Fines for traffic law violations	250,000	250,000
Receipts from cash discounts	25,000	25,000
City allotment funds withheld	250,000	250,000
Receipts from counties to apply on loans	564,000	141,000
Subtotals	$42,354,000	$43,131,000
Less contributions to state police	1,018,000	1,018,000
Less contribution to counties	7,885,000	8,110,000
Less contributions to cities	4,150,000	4,270,000
Subtotals, contributions	$13,053,000	$13,398,000
Total estimated receipts of state funds for highway purposes	$29,301,000	$29,733,000
Cooperative Funds:		
Federal cooperative funds	$ 7,500,000	$ 7,700,000
County cooperative funds	470,000	75,000
City and miscellaneous cooperative funds	350,000	425,000
Subtotals, cooperative funds	$ 8,320,000	$ 8,200,000
Totals, all estimated receipts	$37,621,000	$37,933,000
Estimated balance on hand, beginning of year	$ 4,183,000	$ 2,187,000

year and that collections of federal aid will run about one and one-half million dollars higher, each year, than in 1950, as now appears probable.

Itemized statements of the incomes expected during the years 1951 and 1952 are given in the accompanying Table XI.

Expenditures, 1949 to 1952

In accompanying Tables XII and XIII, expenditure totals for the years 1949 to 1952 are shown to be as follows:

1949	$34,213,456
1950 (estimated)	37,594,000
1951 (estimated)	39,617,000
1952 (estimated)	37,923,000

As these amounts do not run parallel with the incomes of the same years and as, in some cases, they exceed those incomes considerably, an explanation is in order. In 1949, expenditures exceeded income by approximately $8,000,000 and at the end of the year there was still an unexpended balance of $4,340,000. This was made possible by the fact that at the beginning of the year there remained on hand $12,425,000 of the backlog of funds accumulated during the war years when expenditures on highway construction were withheld as an aid in the war effort.

In 1951, expenditures are expected to again exceed income. This time the excess is the result of 1950 being a construction year of less than expected accomplishment. Construction expenditures for 1950 ran short of the Commission's endeavors by approximately $2,000,000. Thus, an excess of $2,000,000 remains to be carried over for expenditure in 1951. In this connection it should be understood that seasonal conditions in Oregon prevent the expenditure each year of the whole of the Commission's income for the year. During the last three months of the year, income exceeds possible expenditures by approximately $2,000,000. For that reason, there will be a balance of $2,000,000 in the State Highway Fund, as of the end of the year, even though the fund is completely depleted as of the preceding October.

TABLE XII

Expenditures for Calendar Years 1949 and 1950

Class of Expenditures	1949 Actual	1950 Estimated
Capital Outlays:		
Federal construction projects	$10,023,719	$11,000,000
State construction projects	4,020,138	3,530,000
City allotment projects	279,924	250,000
Cooperation in forest road work	150,000	1,281,000
Minor betterment	854,340	600,000
Surveys	690,019	747,000
Property acquisiton, general expense	102,017	100,000
Purchase of rights of way, quarries, etc.	1,979,347	2,073,000
Purchase of parks	77,883	100,000
Improvement of parks	165,930	235,000
Improvement of maintenance stations, etc.	319,586	403,000
New highway office building	9,333	1,300,000
Equipment purchases, sales and depreciation	588,363	716,000
Subtotals, capital outlays	$19,260,599	$22,335,000
Maintenance:		
Special maintenance	$ 1,033,528	$ 872,000
General maintenance, primary	7,472,267	7,750,000
General maintenance, secondary	2,362,453	2,500,000
County road signs, etc.	21,491	20,000
Maintenance station and truck scale upkeep	111,178	70,000
Radio communication system	22,468	32,000
Truck load inspection	177,421	200,000
District maintenance superintendence	240,105	266,000
Subtotals, maintenance	$11,440,911	$11,710,000
Miscellaneous:		
Administration and general supervision	$ 1,090,433	$ 1,272,000
Planning and traffic surveys	271,546	250,000
Travel information bureau	230,937	250,000
Operation of parks	236,687	261,000
Operation of drawbridges and ferries	182,093	196,000
Contribution to retirement fund	418,309	480,000
Legislative interim committee expense	18,327	12,000
Miscellaneous general expense	98,792	231,000
Service and clearing accounts	452,711	200,000
Bond interest and maturities	512,111	397,000
Subtotals, miscellaneous	$ 3,511,946	$ 3,549,000
Totals, all purposes	$34,213,456	$37,594,000

TABLE XIII

Anticipated Expenditures for Calendar Years 1951 and 1952

Class of Expenditures	1951	1952
Capital Outlays:		
Federal construction projects	$13,700,000	$13,000,000
State construction projects	3,070,000	4,000,000
City allotment projects	370,000	300,000
Minor betterment	750,000	750,000
Surveys	776,000	775,000
Property acquisition, general expense	114,000	120,000
Purchase of rights of way, quarries, etc.	3,840,000	2,755,000
Purchase of parks	125,000	75,000
Improvement of parks	555,000	220,000
Improvement of maintenance stations, etc.	800,000	400,000
New highway office building	490,000	....
Equipment purchases, sales and depreciation	370,000	120,000
Subtotals, capital outlays	$24,960,000	$22,515,000
Maintenance:		
Special maintenance	$ 500,000	$ 500,000
General maintenance, primary	7,500,000	7,750,000
General maintenance, secondary	2,400,000	2,500,000
County road signs, etc.	25,000	20,000
Maintenance station and truck scale upkeep	75,000	75,000
Radio communication system	33,000	35,000
Truck load inspection	236,000	250,000
District maintenance superintendence	270,000	270,000
Contingencies, maintenance	100,000	500,000
Subtotals, maintenance	$11,139,000	$11,900,000
Miscellaneous:		
Administration and general supervision	$ 1,437,000	$ 1,480,000
Planning and traffic surveys	316,000	300,000
Travel information bureau	250,000	250,000
Operation of parks	302,000	295,000
Operation of drawbridges and ferries	225,000	225,000
Contribution to retirement fund	495,000	500,000
Miscellaneous general expense	155,000	130,000
Service and clearing accounts	....	....
Bond interest and maturities	338,000	328,000
Subtotals, miscellaneous	$ 3,518,000	$ 3,508,000
Totals, all purposes	$39,617,000	$37,923,000

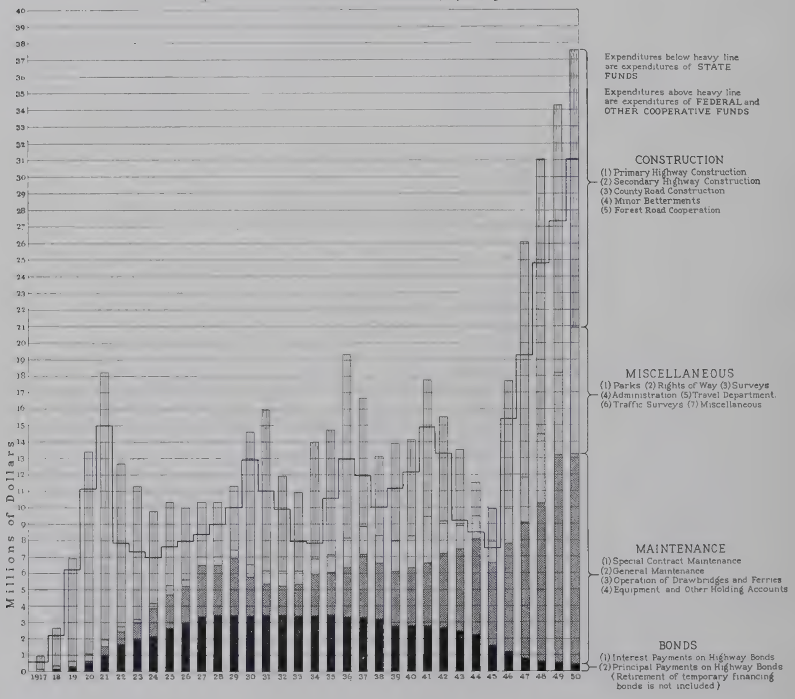
Federal Participation in Financing of State Highway Work

Much of the work being performed under the direct control and supervision of the State Highway Commission is financed in part with funds provided by the Federal Government. Federal funds thus utilized are of several classes, each class being subject to such special use and to such special limitation and control as may be specified for it by the Congress. The several classes that are currently active are as follows:

1. Federal Aid Primary Highway Funds
2. Federal Aid Secondary Highway Funds
3. Federal Aid Urban Highway Funds

The first two classes of the currently active funds were made available year after year for many years prior to the war with comparatively slight changes in annual amounts and with few changes in bases of application. The third class

STATE HIGHWAY EXPENDITURES 1917-1950



of the currently active funds was set up by the federal aid highway act of 1944, in recognition of the growing need for improvement of federal aid routes through cities and their surrounding urban areas. Presumably, this class of funds will be continued on a more or less permanent annual basis, the same as the federal aid primary highway funds and the federal aid secondary highway funds.

Federal funds for highway work are not turned over to the states in advance of construction. Instead, they are paid to the states in the form of reimbursement during and after the period that the work is in progress. They are paid only on projects for which the plans have been previously approved by the Bureau of Public Roads and for which the work is conducted in accordance with applicable requirements established by the Bureau of Public Roads.

The extent of federal participation in the costs of projects selected for federal aid is, basically, fifty per cent. However, in those states in which more than five per cent of the land area is unappropriated and unreserved public land and nontaxable Indian land, the ratio of federal participation is in-

North Unit, Enterprise-Forest Boundary project, Wallowa County, rebuilt with heavier base.

creased on a proportionate basis with the result that federal participation in Oregon is at the rate of 62.11 per cent.

Federal aid apportioned to a state must be placed under contract within two years after the close of the fiscal year for which the apportionment is made. Amounts not so contracted revert to the federal government to be redistributed among all of the states. Under this arrangement, the State has about three and one-half years in which to use the apportionment for a given year.

Oregon's allotments of federal aid for each of the two fiscal years 1952 and 1953 are approximately as follows:

Federal aid primary highway funds	$3,932,000
Federal aid secondary highway funds	2,714,000
Federal aid urban highway funds	1,115,000
	$7,761,000

The classes of projects to which the use of the several kinds of federal funds are limited are as described in the paragraphs which follows:

Federal Aid Primary Highway Funds: Federal aid primary highway funds can be applied only on permanent improvement projects on highways included in the Federal Aid Primary Highway System. A map of the system accompanies this report, and in the accompanying Table IV there are given the numbers, names, and lengths of the highways which comprise the system. The total mileage of federal aid primary highways is 3,920.6 miles, which is approximately 80 per cent of the total mileage in the Primary State Highway System.

Federal Aid Secondary Highway Funds: Federal aid secondary highway funds are available for use only on state highways and county roads included in the federal aid secondary highway system. This system includes at present 4,473.6 miles of highways of which 903.1 miles are primary state highways, 2,219.3 miles are secondary state highways and 1,351.2 miles are county roads. The names, numbers and mileages of the highways and roads comprised in the system are as given in Table V.

TABLE XIV

Federal Aid Funds and Forest Road Funds Apportioned to Oregon

Period for Which Funds Are Apportioned	Federal Aid Funds	Forest Road Funds	Total
Total of prior apportionments*	$61,336,160.18	$24,330,400.89	$85,666,561.07
Act of November 9, 1941:			
Period of war emergency			
Flight strip funds	1,179,056.00		1,179,056.00
Access road funds	5,226,196.21		5,226,196.21
Strategic network funds	2,689,873.31		2,689,873.31
Advance engineering funds	164,913.00		164,913.00
Act of December 20, 1944:			
July 1, 1945 to June 30, 1946			
Federal aid primary funds	3,728,908.00	3,421,661.00	7,150,569.00
Federal aid secondary funds	2,544,582.00		2,544,582.00
Federal aid urban funds	810,873.00		810,873.00
July 1, 1946 to June 30, 1947			
Federal aid primary funds	3,728,403.00	3,439,553.00	7,167,956.00
Federal aid secondary funds	2,544,245.00		2,544,245.00
Federal aid urban funds	810,873.00		810,873.00
July 1, 1947 to June 30, 1948			
Federal aid primary funds	3,683,994.00		3,683,994.00
Federal aid secondary funds	2,513,880.00		2,513,880.00
Federal aid urban funds	800,477.00		800,477.00
Act of June 29, 1948:			
July 1, 1949 to June 30, 1950			
Federal aid primary funds	3,330,486.00	2,756,755.00	6,087,241.00
Federal aid secondary funds	2,272,391.00		2,272,391.00
Federal aid urban funds	720,430.00		720,430.00
July 1, 1950 to June 30, 1951			
Federal aid primary funds	3,325,613.00	2,753,489.00	6,079,102.00
Federal aid secondary funds	2,269,150.00		2,269,150.00
Federal aid urban funds	720,430.00		720,430.00
Act of September 7, 1950:			
July 1, 1951 to June 30, 1952 (estimated)			
Federal aid primary funds	3,930,000.00	2,754,914.00	6,684,914.00
Federal aid secondary funds	2,710,000.00		2,710,000.00
Federal aid urban funds	1,115,000.00		1,115,000.00
Totals	$112,155,933.70	$39,456,772.89	$151,612,706.59

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* Apportionments of F.L.H. funds in the years 1941, 1942 and 1943 have been reduced by $159,697.75, as this amount was withheld by the Portland office of the U. S. Bureau of Public Roads for use in the construction of the South Unit, Follyfarm-Scotts Butte Project in Malheur County.

Federal Aid Urban Highway Funds: The use of federal aid urban highway funds is limited to the portions of federal aid primary highways which are within cities having populations greater than 5,000 or within such areas immediately adjacent to such cities as may, by joint action of the Highway Commission and the Bureau of Public Roads, be designated "urban areas."

Federal Lands Highway Funds: Federal lands highway funds are not at present available but when available may be used for work on unappropriated and unreserved public lands, nontaxable Indian lands, or other federal reservations other than forest reservations. The locations in Oregon at which these funds can be used advantageously are in the public land areas in the southeastern portion of the state, in the Warm Springs Indian Reservation, and the Klamath Indian Reservation. Use of the funds has been confined, so far, to the I. O. N. Highway in Malheur County, the Central Oregon Highway in Harney County, the Warm Springs Highway in Jefferson and Wasco Counties, the Klamath Falls-Lakeview Highway in Klamath County, and the Princeton-Rome Highway in Harney and Malheur Counties.

Federal lands highway funds may be applied on a 100 per cent basis on those parts of federal lands highway projects which are within the limits of public lands of the kinds mentioned in the preceding paragraph. None can be applied on such portions of projects as are on privately-owned lands or state-owned lands.

Forest Highway Work

Federal forest highway work, unlike federal aid highway work is performed under the direct supervision of the Federal Bureau of Public Roads. The State Highway Commission has a voice in the selection of projects and in the types and standards of construction, and sometimes has charge of the making of surveys, but does not in any other respect participate in the direction and performance of the work. The Bureau of Public Roads awards the construction contracts, engineers the work, pays the contractor and does all other things necessary to bring the work to satisfactory completion.

Federal allotments for forest highways have been made more or less regularly since 1916 and have been distributed among the states in proportion to areas and values of the national forest lands within the states. Oregon's share of these allotments has been $39,456,773. Of this amount, $25,294,766 has been expended on the state highway system to date. This expenditure of federal moneys has been supplemented by State cooperation in the amount of $6,708,679, and county cooperation in the amount of $2,286,030, bringing the total expenditures for forest highway projects on the state highway system to $34,289,475. This expenditure has resulted in the completion of 898 miles of grading, 886 miles of rock surfacing, 193 miles of oiling and 146 miles of bituminous macadam.

Funds available for forest highway work during the fiscal years 1952 and 1953 are expected to total about $5,600,000.

Use of forest highway funds is limited to work on the Forest Highway System, which system has been arrived at by mutual agreement between the Bureau of Public Roads, the National Forest Service, and the State Highway Commission. It includes only roads which are within or near National For-

Buford Creek Grade on Enterprise-Lewiston Highway near Washington State Line.

ests. A listing of the roads in the system appears in accompanying Table VI. Most, but not all, of the roads included are state highways.

Financil cooperation in forest highway work by the State or by counties is not required but is sometimes given. In all cases, the cost of right of way across lands not owned by the Federal Government is borne by the State or, if the road is a county road, by the county.

Sections of highway constructed with forest highway funds are maintained by the federal government for two years. Responsibility for maintenance is then assumed by the State or the county, depending on whether the project is, or is not, on the state highway system.

County and City Participation in Revenues from Motor Vehicle Imposts

Revenues from motor vehicle imposts are used first of all to pay refunds allowable under the provisions of the laws and to defray expenses incurred by the Secretary of State and the Public Utilities Commissioner in making collections of the revenues and in performing certain administrative and enforcement duties with which they are charged.

The balances remaining after payment of the refunds and expenses mentioned, are allotted as follows:

To Counties	19.0%
To Cities	10.0%
To State Police Department—A monthly allowance fixed by the State Legislature, which amount at present approximates	2.6%
To Highway Commission—The balance remaining after payment of above listed allotments, which balance approximates	68.4%

County Participation in Income. The counties' share of motor vehicle imposts is distributed among the counties in proportion to the numbers of motor vehicles of all kinds registered from the respective counties during the preceding year. The distribution is made on a quarterly basis, the quarterly periods ending on March 31, June 30, September 30 and December 31. The total amount of each quarterly distribution is 19 per cent of the motor vehicle revenues credited to the State Highway Fund during the quarter. Distribution of each quarterly share is made to the counties on the last day of the month which follows the ending month of the quarter.

Funds received by the counties from this source are required by law to be used for the following purposes, preferentially in the order in which they are listed.

1. In payment of interest and principal on bonds issued for the purpose of road construction and improvement, unless other provision has been made for such payment.
2. In payment of the cost of preparing the roadbed, bridges, etc., for the construction of state highways, as provided by law, unless other provision has been made for payment of such cost.
3. In any other manner for general road improvement, at the discretion of the county court.

For detail as to the extent to which the counties have participated in these revenues, see Table VII in Section Two and Table No. 28 in Section Three of this report.

The 1949 legislature passed an act enabling each individual county to borrow from the highway fund an amount of money, not to exceed one-half the amount of highway revenue distributed to such county between the dates of July 1, 1947 and April 1, 1949, for use in reconstructing county roads or bridges damaged by the abnormally inclement weather conditions prevailing throughout Oregon during the period from October 1, 1948, to April 1, 1949. Repayment of any such moneys borrowed is being accomplished by withholding one-eighth of the total amount borrowed from each regular distribution made to the county concerned after March 31, 1950, until the highway fund has been reimbursed in full. The counties requesting and receiving loans under this act are as follows:

Baker	$ 55,000.00	Marion	$100,000.00
Benton	50,000.00	Polk	88,945.00
Clatsop	99,091.27	Tillamook	57,000.00
Douglas	100,000.00	Umatilla	150,000.00
Jefferson	12,201.51	Wallowa	28,360.19
Klamath	120,000.00	Washington	100,000.00
Malheur	87,000.00	Yamhill	80,000.00

City Participation in Income. Of the cities' 10 per cent of the motor vehicle revenues, $250,000 is, each year, held in the State Highway Fund for expenditure on city streets by the State Highway Commission as hereinafter explained. The remainder of the cities' 10 per cent is distributed among the cities of the State in proportion to population with the proviso that for any city having a population greater than 100,000, only two-thirds of such city's population is to enter into the calculation. The distribution is made on a semiannual basis, the semiannual periods ending on June 30 and December 31. The total amount of each semiannual distribution is $125,000 less than 10 per cent of the motor vehicle revenues credited to the State Highway Fund during the semiannual period. Distribution of each semiannual share is made to the cities immediately following the close of the semiannual period.

Moneys distributed to the cities as above described are required by law to be used "for constructing, reconstructing, improving, repairing, or maintaining city streets which have not been designated as connecting links between state highways by the state highway department in the manner provided by law." Expenditure of the moneys by cities may be deferred more than two years only when such deferment is approved by the State Highway Engineer. Cities having populations less than 1,000 may expend their respective shares of the moneys only on work for which plans have been submitted to and approved by the State Highway Commission.

Information as to the amounts the cities have received under the above described distribution of motor vehicle revenues is given in Table VII of Section Two and Table No. 26 of Section Three of this report.

The $250,000 which is held in the State Highway Fund each year for expenditure by the Highway Commission on work on city streets is required by law to be expended "upon streets not a part of the state highway system within cities which are receiving excessive wear through sudden increases in population in the area or heavy and unusual industrial traffic." Determination of the distribution of the expenditures to be thus made by the Highway Commission is required to be made by the Highway Commission "after considering applications made to it therefor from the cities."

In its distribution of the $250,000 annually available for expenditure, the Highway Commission has found it necessary to restrict its allocations to cities of populations less than 5,000, and to fix the sum of $15,000 as the maximum to be expended on any one project. In a number of cases, the cities contributed additional funds or work to supplement the amounts allotted from the $250,000 fund.

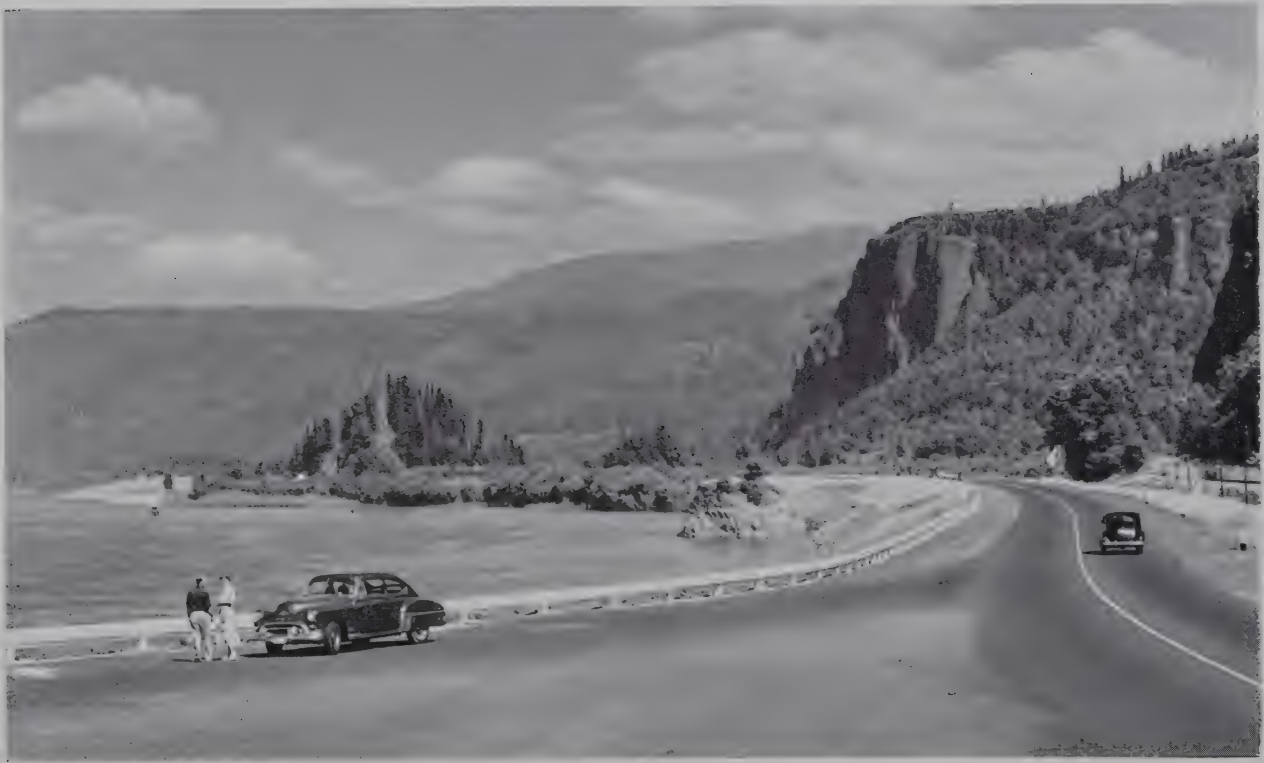
The amounts that have been expended from city allotment fund withholdings since the beginning of the withholding procedure are as shown in accompanying Table XV. The cities in which the 1948 and 1949 expenditures were made and the corresponding expended amounts are shown in Table 27 of Section Three of this report.

TABLE XV

City Allotment Funds

Year	City Allotment Funds Only		Additional Funds Contributed By Cities
	Annual Allotment	Net Amount Expended	
1948	$ 250,000.00	$ 217,087.58	$
1949	375,000.00	234,119.29	58,055.11
1950 (estimated)	250,000.00	178,000.00	87,000.00
	$ 875,000.00	$ 629,206.87	$ 145,055.11
Unexpended balance, end of 1950 (estimated)		245,793.13	
		$ 875,000.00	

Of the $245,793.13 estimated unexpended balance, approximately $116,000 is expected to be obligated on existing contracts as of December 31, 1950.



Columbia River express route in the vicinity of Crown Point, Multnomah County.

REPORT OF CONSTRUCTION DEPARTMENT

H. G. SMITH, *Construction Engineer*

The past biennium has brought about the largest construction program in the history of the Construction Department. Contracts were awarded on 226 projects involving grading, paving, reoiling, guard rail construction, landscaping and rock production.

Projects are classed in four categories, viz: Primary Federal Aid, Secondary Federal Aid, Urban Federal Aid, and State. There were 26 Primary Federal Aid, 30 Secondary Federal Aid, eight Urban, and 162 State Projects. The State projects are further segregated as follows: 94 resurfacing, oiling and landscaping contracts, 47 maintenance material rock production contracts, and 21 city street contracts not on the State Highway System.

Federal Aid Primary Highway Projects

One of the principal federal aid primary contracts was the Dodson-Bonneville Section of the Columbia River Highway. This section involving 5.22 miles of grading, bituminous macadam surfacing and structures was awarded October 24, 1949, and is expected to be completed about July 31, 1951. The cost, exclusive of structures is estimated at $1,000,000. Because of the close proximity of the Union Pacific Railroad and the necessity of keeping traffic going through, the contractor was forced to use extreme caution in his blasting operations. He was permitted to close the road for periods of one hour, but occasionally traffic was, of necessity, delayed as much as four hours. Traffic was controlled by means of short wave radio.

Another important project was the Delmar-Coaledo Section of the Oregon Coast Highway in Coos County. This project involved the straightening and widening to 4-lane width a very narrow and crooked section of the highway.

The Tillamook-Pleasant Valley Section of the Oregon Coast Highway was another large improvement on the Coast Highway System. This job, costing approximately one million dollars, provided for the straightening of six miles of very poor alignment.

In Clatsop County, another section of the Coast Highway between Seaside and Hug Point, known as the Summit-Tolovana Park Section, was placed under contract. This section involved 2.5 miles of grading and bituminous macadam construction through very rugged country. Drainage was a major problem on this project and numerous slides were encountered.

The Barkley Springs-Algoma Section of The Dalles-California Highway in Klamath County is one of the few remaining sections needed to medernize U.S. 97 throughout Klamath County. This project, involving heavy cuts at each end, and a long fill over marshy land, has presented many difficult problems for the contractor. When completed, it will eliminate several sharp curves and steep grades and will result in considerable saving in distance. Completion is expected early in 1951.

A very important improvement has been started between La Grande and North Powder, on the Old Oregon Trail Highway. The southerly 15 miles of this section was placed under contract for grading and cinder surfacing in March of 1950. This is a modern two-lane highway with four-lane sections being provided over summits to permit the passing of slower vehicles. Completion of the entire section is expected by the fall of 1952. Considerable saving in distance will result from this construction.

Another important link in the Columbia River Highway is the Squally Hook-Quinton Section. Contracted in November, 1949, and expected to be completed in June, 1951, this project completes the modernization of this highway between The Dalles and Arlington.

Federal Aid Secondary Highway Projects

Thirty projects of this type were placed under contract during the biennium. A few of the major ones will be discussed briefly.

Of particular interest to Klamath County was the Henley-Lost River Section of the Klamath Falls-Malin Highway. Running through the highly productive potato area of the lower Klamath basin, the project consisted primarily of widening and drainage correction.

The Holdman Junction-Campbell Ranch Section of the Athena-Holdman Secondary highway follows through the wheat country of Umatilla County and provides a much-improved hauling road for the wheat farmers of this area.

In southwestern Malheur County, the construction of the south unit of the Princeton-Follyfarm Section of the Rome-Princeton Highway has provided a much-needed outlet for the Jordan Valley and McDermitt areas. One more unit remains to provide a fast modern road to the west from northern Nevada and southeastern Idaho.

In Linn County, logging interests will be aided by the construction of the Thomas Creek-Lyons Section of the Albany-Lyon Highway. Straightening, widening and oiling was involved in this contract which was awarded in February, 1950.

In Deschutes County, the Crook County Line-Bend Airport Section consisting of grading, surfacing and oiling on the Powell Butte Secondary Highway removed a 7.6-mile section of unsurfaced-unoiled road from the secondary system.

Several other grading, surfacing and oiling projects in various parts of the state hold particular interest for the immediate communities, but are too numerous to discuss here.

Federal Aid Urban Highway Projects

In the Portland area several contracts have been awarded on the Pacific Highway West between Tillamook Street and Sheridan Street. These projects, consisting of grading, paving, structures, et cetera are handled jointly by the Bridge and Construction Departments, but under jurisdiction of the Bridge Department.

On the Pacific Highway East (N. E. Union Avenue) a contract was let between Denver Avenue and Columbia Slough, involving widening, paving, service road connections and structures. Completion of this section will speed up traffic and relieve congestion materially.

In Eugene the Pacific Highway between High Street and Walnut Street was widened to four lanes with traffic dividers and channelized intersections. This completed project has reduced the traffic congestion in Eugene to a great extent and is deeply appreciated by all who have occasion to use it.

State Projects

State projects (projects financed without federal aid) are divided into three classes as follows: (1) rock production projects for maintenance purposes; (2) projects on city streets not on the state highway system, and (3) projects on state primary and secondary highways involving grading, surfacing, oiling, reoiling, pavement resurfacing, drainage, landscaping, guard rail construction and flood damage repair.

No discussion of the first two classes will be made in this report. Of the third class a few of the major projects will be reviewed as follows:

The heavy flood of May, 1948, was the cause of much damage to the highway system in the vicinity of Portland and in several areas along the Columbia River Highway. Four emergency contracts were awarded for repair of major portions of this damage, three in Portland and one on the Columbia River Highway just east of The Dalles.

Extreme frost during the winter of 1949 caused breakup of oiled surfaces throughout the state of such magnitude that normal maintenance forces were insufficient to perform all of the required repair work. Because of this situation, much of the repair work was done by contract.

Landscaping contracts were awarded for several areas on Front Avenue in Portland, and at other locations throughout the state.

Several contracts for the installation of guard rail and sight posts on dangerous sections of road were also awarded. Of these contracts, the principal ones were on the Coos Bay-Roseburg Highway, The Green Springs Highway, the Columbia River Highway and the Pacific Highway.

A state construction project of particular benefit to the traveling public was the resurfacing and oiling of the Salt Creek-Odell Butte Section of the Willamette Highway. This particular section has been considerably damaged each winter by "frost boils," and at times has become almost impassable. The addition of a heavy rock base and a bituminous madacam surfacing has alleviated this trouble.

Construction on the Cow Canyon Section of The Dalles-California Highway in southern Wasco County eliminated several right-angle turns which had proved hazardous to the traveling public. Numerous accidents, including some fatalities, have occurred on these turns. The reconstruction should eliminate accidents of that kind.

On the Oregon Coast Highway, the Coaledo-Chrome Plant Section, a section situated immediately south of the Delmar-Coaledo Section described above under the heading "federal aid primary projects," was improved as a state project during this period. This project, 2.14 miles in length, has eliminated a very crooked section of this major highway.

In Crook County, the surfacing of the Prineville-Eagle Rock unit of the Paulina Secondary Highway has been of great assistance to stockmen and log haulers. Previously impassable in winter, it is now an all-weather road.

On the Umpqua Highway, construction of the Luder Creek-Murphy Camp Section, 2.1 miles in length, eliminated a narrow, crooked section of highway which has been very dangerous in past years.

General Comments

During the past two years the personnel problem has improved considerably, although many of the new engineer employees have been lacking in practical experience. Even though more men were available, the increased number of construction projects absorbed most of their time, with the result that an insufficient number of men were available for survey and planning work. This situation complicated to some extent the problem of getting construction projects contracted.

The department has acquired two rock boring machines for use in prospecting, soil analysis and slide investigation. One machine, a horizontal auger, is used primarily in slide investigation and in the placing of drain tile to drain slide areas. The other machine, a vertical drill, is used on location for soil sampling and classification. Very satisfactory results have been obtained from the use of these machines.

The addition of a soils engineer and a geologist to the staff has resulted in better preparation of projects and in some cases prevented or eliminated unfavorable soil and slide conditions. These two men are available to all divisions for advice and consultation, and are proving to be valuable additions to the Department.

Striping machine will paint one, two or three lines in yellow or white.

REPORT OF MAINTENANCE DEPARTMENT

E. A. COLLIER, *Maintenance Engineer*

In 1949 Oregon experienced the coldest and driest January for 60 years. Frost reached depths of 18 inches in Portland and up to 73 inches in eastern Oregon. Highway surfaces were heaved. Then February continued cold but precipitation was double the normal and snow depths at some mountain stations reached an all-time high. At Timberline Lodge the depth was 244 inches. Severe damage to highways resulted and restoration cost $1,700,000. Sanding icy highways was required over long periods. Again in January, 1950, severe cold with high winds, snow and ice in the Columbia Gorge blocked that artery and caused increased costs for snow removal and sanding all over the state and reduced travel. Snow depth on Santiam Pass reached 170 inches and at Timberline lodge 246 inches. These two tough winters have caused high maintenance costs but traffic was kept moving most of the time through the valiant efforts of the men in the field who worked faithfully for long hours in severe weather.

The total miles of highway maintained at present is 7,292. The total number of employees in field and shop was 2,200 as of September 1, 1949, during the height of the frost damage repair work. As of September 1, 1950, the number employed was 1,824.

Organization

The general maintenance work is performed by section crews, 137 in number, each headed by a section foreman. Each crew works under the supervision of one of the 17 district maintenance superintendents employed. These crews carry on their work from strategically located headquarters, making routine repairs, plowing snow, sanding slippery pavements, removing slides, fallen rocks and trees, and patrolling their sections during stormy weather. They are alert at all times to give prompt attention to the needs of the roads and to the safeguarding of traffic. The foremen and superintendents are the representatives of the Highway Department most often contacted by residents and travelers.

Extra gang crews for pavement repair, oiling, bridge repair, sign installation and traffic line striping are organized independently of the section maintenance crews to perform their particular types of repair work.

The district maintenance superintendents organize and supervise the crews and equipment, order materials and supplies, and in general handle all operations in their respective districts under the direction of the five division engineers.

In addition to the general maintenance work performed by state forces, special maintenance jobs, such as some reoiling of highways and repainting of major bridges, are done by contract. Crushed rock and gravel are produced by contract or purchased from commercial plants as needed. In 1949 the total quantity of rock produced by contract was 425,900 cubic yards, the quantity purchased from plants was 368,266 cubic yards.

Maintenance of Pavements and Bituminous Surfaces

Ten crews with portable paving plants mixed and placed 154,644 tons of asphaltic concrete in 1949 at a cost of $8.50 per ton, a saving in unit cost of 12 per cent over costs of 1948. In

Maintenance equipment building constructed in 1949 at Hereford, Baker County.

1950, the number of tons will be about 151,000 and the cost $8.46 per ton. Three new paving plants have replaced old ones with resultant increased daily output. Working hours for crews were reduced from 48 per week in 1948 to 44 per week in 1950. Patching with hot asphaltic concrete as done by these crews has proved most effective on all types of surfaces, both for repair of breaks and for restoration of smooth riding quality.

Five oil crews applied 4,042,000 gallons of asphaltic oil in 1949 and 4,005,000 gallons in 1950. New shovels, oilers and trucks have helped increase output. Full roadway width oiling is used now in many places to good advantage without hampering traffic.

Unit Oiling Costs for 1949

Work			Total Cost		Material Cost	
Specification	Thickness	Miles	Per Mile	Per Sq. Yd.	Oil Per Ton	Rock Cu. Yd.
O-31	3/16″	49.3	$ 830	$0.07	$24.57	$2.52
SO-30	3/8	291.8	1,155	0.098	26.31	2.54
DO-30	3/8	321.7	1,614	0.138	24.64	2.39
O-9	3/4	88.1	2,775	0.236	23.77	2.63
O-11	1½	35.2	4,778	0.407	26.73	2.62

Costs per mile have been adjusted to a 20-foot width.

Oil costs shown are costs at point of unloading and the average is $25.20 per ton or 25 per cent more than in 1947. Rock averaged $2.54 at stockpiles which is 18 per cent more than in 1947. However, the cost per square yard has increased only 12 per cent from 1947 to 1949 and 1950 costs will run under those for 1949. To repair excessive damage to oil surfaces the past two winters, it has been necessary to have a considerable mileage of reoiling work performed by contract.

Bridge Maintenance

The maintenance and repair of some 2,400 bridges on the State Highway System was carried on during the biennium by 17 bridge crews. These crews perform all of the various types of repair work necessary on concrete, timber and steel structures. In addition to routine maintenance and repair, these crews perform considerable betterment consisting of such work as channel protection, riprap, widening both timber and concrete structures, and the placing of permanent culverts and fills to replace small decayed timber spans, cattle passes or timber box culverts.

There are 23 drawbridges on the State Highway System that are operated full-time or part-time by State operators, as required by War Department Regulations. One of these is the Interstate Bridge over the Columbia River between Portland, Oregon, and Vancouver, Washington, which is operated on a cooperative basis with the State of Washington, the State of Washington reimbursing the State of Oregon for half the cost. Two small free ferries on highway routes, at Wilsonville and at Enegren, are provided by contract operation.

The Astoria-Megler ferry was taken over by the State June 1, 1946, and since that date has been operated as a toll ferry. A new steel hull ferry boat, christened the "M. R. Chessman" in honor of a former Highway Commissioner and prominent citizen of Astoria, was constructed and placed in service in May, 1948. This makes three ferry boats available for this important interstate link on U.S. Route 101.

Maintenance and Operation of Buildings

The State owns sites and buildings located throughout the state to provide office and storage space for five division headquarters, 17 district headquarters, 112 section headquarters, four equipment repair shops and other units of the maintenance organization. At 23 isolated maintenance stations, 66 housing units are furnished employees at reasonable rentals. At 18 locations, office facilities are furnished the State Police. At 52 locations, truck scales and scale houses are maintained for use by Weighmasters and State Police. The maintenance and repair of the above buildings and truck scales is performed by State bridge crews.

The State also rents 20 section maintenance buildings, the majority of which are inadequate. In several cases owners have refused to renew leases under any circumstances, and in other cases exorbitant rentals are being asked. To provide needed buildings at these stations and to provide new stations to care for increasing needs, a program of building construction has been underway since the war. Several new maintenance station buildings are planned for the next biennium. Standard designs now provide fireproof block construction with metal roof and uplift doors.

Signs, Signals and Traffic Lines

The work of installing and maintaining signs and signals and the painting of traffic lines is performed by State crews under the supervision of an assistant maintenance engineer. The yellow traffic stripe down the center of the highway is very popular with motorists and very important for traffic safety. Eleven sign crews, five crews of electricians for signals and lights, and four striping crews operated during 1949. Cost for center line striping was $199,000 that year.

Traffic Stripe

Type	Miles	Cost Per Mile
4″ Broken	4,698	$16.82
4″ Solid	3,024	26.23
4″ Beaded	200	71.91
White No Passing	392	26.88

Large overhead flourescent lighted direction signs visible at distances of 500 feet have been designed and installed at principal junction points to facilitate the flow of traffic. Signs directing attention to scenic features have also been installed at many places.

Equipment

The Maintenance Department furnishes and repairs all highway department equipment. Rent is charged on each piece to cover depreciation, repair and maintenance. Repairs are made at four shops located at Salem, La Grande, Klamath Falls and Coquille. Each shop is in the charge of a superintendent under the direction of the equipment superintendent at Salem. Supplies and parts are purchased, stored and dispensed by the storerooms operated in connection with the four shops.

Portion of a new 336-ft. equipment storage shed at Salem Shops.

During the war years, it was necessary to prolong the life of trucks and other equipment by extensive overhauling and repairing. The number of prewar trucks still in service is 486 and at least half of these should be retired in 1951 by purchasing new equipment. The biggest loss in the use of old equipment is not the cost of repairs or the lack of daily efficiency, but the delays and disruptions of crew organization which occur when the equipment breaks down.

Accident Prevention

During 1949, 680 personal injuries were sustained by highway employees, ranging from many minor ones to five of fatal consequence. A safety program was initiated in July of that year to reduce this toll. The Accident Prevention Division of the State Industrial Accident Commission has conducted a series of safety meetings for all maintenance workmen. These were held at section headquarters and shops with considerable interest shown. The Governor's First Annual Safety Conference in Portland November 30, 1949 was attended by representatives from all five divisions and the Salem Office. Safety Engineers from the State's liability insurance carrier met with many of the section crews to discuss safe driving and reported to the Salem office frequently. A safe driver contest was undertaken and instructions were sent to the field from time to time to promote accident prevention.

There have been no fatalities in the Maintenance Department during the period August 1, 1949, to November 30, 1950. The Accident Commission reports a reduction in accident claim costs for all highway employees of $20,400, or 32 per cent, for the first eight months of 1950 over the same months in 1949. There has been a 28 per cent reduction in time loss accidents, and 24 per cent reduction in accidents involving no time loss. The Safety Program has paid off. Increased continuous effort along this line is planned through appointment of a safety engineer, whose principal duty will be accident prevention.

Cost Statements

Itemized statements, showing the "per mile" cost of maintenance for both the primary and secondary systems during each of the calendar years 1948 and 1949 and showing the numbers of miles of highway maintained, appear in accompanying tables.

TABLE XVI

Costs of Maintaining Primary State Highways
Calendar Year 1948

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 142,065.06	$	$ 142,065.06	344	$ 413
Asphaltic pavement repairs	293,216.75		293,216.75	547	536
Bituminous macadam repairs	596,669.26	28,037.48	624,706.74	1,248	501
Oiled macadam repairs	2,086,982.99	56,702.25	2,143,685.24	2,405	891
Untreated and graded, repairs	86,290.26		86,290.26	273	316
Base and sub-base repairs	6,126.48		6,126.48		
Special flood damage repairs		461,106.57	461,106.57		
Shoulders					
Blade, patch, retreat	356,068.62		356,068.62		
Sidewalks, islands, curbs	5,233.07		5,233.07		
Drainage					
Ditches	284,156.50		284,156.50		
Drainage tunnels	34,552.56		34,552.56		
Pipe culverts, siphons, flumes	56,420.28		56,420.28		
Structures					
Box culverts and bridges, 20 ft. and under in length	25,224.34		25,224.34		
Bridges longer than 20 feet	249,009.28	143,206.58	392,215.86		
Guard fence and sight posts	100,866.01		100,866.01		
Tunnels, roadway	5,635.12		5,635.12		
Retaining walls, dikes, etc.	1,936.67		1,936.67		
Roadbed and Right of Way					
Remove weeds, brush and debris	316,499.80		316,499.80		
Landscaping	18,250.79		18,250.79		
Slides, roadbed and slopes	352,754.92	16,586.35	369,341.27		
Rights of way fence and markers, mileposts	2,637.80		2,637.80		
Road approaches	36,001.76		36,001.76		
Traffic Service					
Traffic signals	9,423.66		9,423.66		
Signs and highway markers	107,154.30		107,154.30		
Traffic lines	189,384.35		189,384.35		
Snow removal	298,955.60		298,955.60		
Sanding slippery pavement	218,602.83		218,602.83		
High water: Flag and stake	31,095.67		31,095.67		
Highway illumination	19,009.88		19,009.88		
Road magnet operation	4,654.62		4,654.62		
Subtotal	$5,934,879.23	$ 705,639.23	$6,640,518.46		
Maintenance superintendence	154,589.61		154,589.61		
Total	$6,089,468.84	$ 705,639.23	$6,795,108.07	4,817	$1,411

TABLE XVII

Costs of Maintaining Secondary State Highways
Calendar Year 1948

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 22,780.05	$	$ 22,780.05	50	$ 456
Asphaltic pavement repairs	53,607.99	....	53,607.99	172	312
Bituminous macadam repairs	11,948.56	....	11,948.56	40	299
Oiled macadam repairs	792,798.56	68,720.45	861,519.01	1,377	626
Untreated and graded, repairs	222,000.83	....	222,000.83	799	278
Base and sub-base repairs	25,570.13	....	25,570.13	....	....
Special flood damage repairs	....	36,383.42	36,383.42	....	....
Shoulders					
Blade, patch, retreat	67,122.07	....	67,122.07	....	....
Sidewalks, islands, curbs	158.37	....	158.37	....	....
Drainage					
Ditches	102,461.84	....	102,461.84	....	....
Drainage tunnels	2,767.91	....	2,767.91	....	....
Pipe culverts, siphons, flumes	23,943.50	....	23,943.50	....	....
Structures					
Box culverts and bridges, 20 ft. and under in length	17,943.14	....	17,943.14	....	....
Bridges longer than 20 feet	161,590.12	8,906.14	170,496.26	....	....
Guard fence and sight posts	7,548.39	....	7,548.39	....	....
Tunnels, roadway	....	....	....	....	....
Retaining walls, dikes, etc.	107.20	....	107.20	....	....
Roadbed and Right of Way					
Remove weeds, brush and debris	103,614.93	....	103,614.93	....	....
Landscaping	342.77	....	342.77	....	....
Slides, roadbed and slopes	85,128.04	....	85,128.04	....	....
Right of way fence and markers, mileposts	1,745.92	....	1,745.92	....	....
Road approaches	14,479.68	....	14,479.68	....	....
Traffic Service					
Traffic signals	342.66	....	342.66	....	....
Signs and highway markers	25,345.02	....	25,345.02	....	....
Traffic lines	37,775.78	....	37,775.78	....	....
Snow removal	68,636.58	....	68,636.58	....	....
Sanding slippery pavement	15,950.16	....	15,950.16	....	....
High water: Flag and stake	6,784.57	....	6,784.57	....	....
Highway illumination	360.58	....	360.58	....	....
Road magnet operation	1,560.43	....	1,560.43	....	....
Subtotal	$1,874,415.78	$ 114,010.01	$1,988,425.79	....	....
Maintenance superintendence	48,817.77	....	48,817.77	....	....
Total	$1,923,233.55	$ 114,010.01	$2,037,243.56	2,438	$ 836

TABLE XVIII

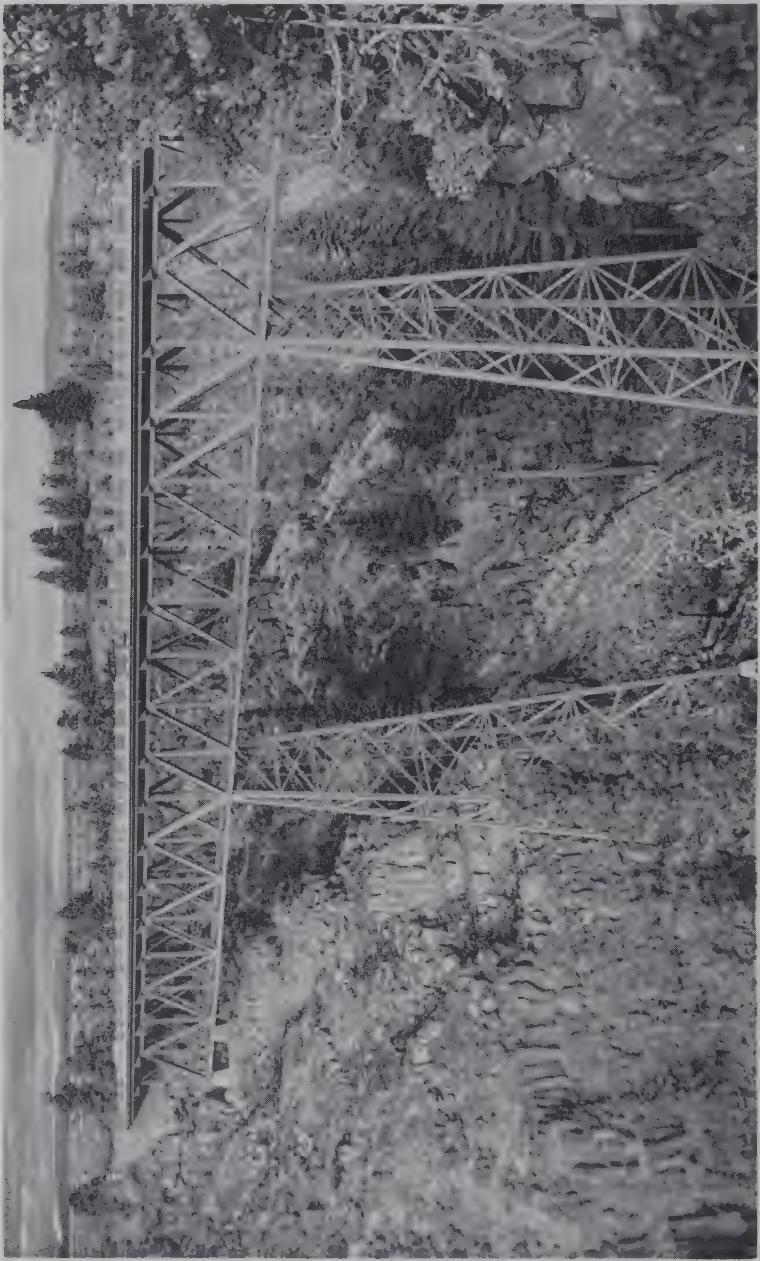
Costs of Maintaining Primary State Highways
Calendar Year 1949

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 161,519.17	$	$ 161,519.17	345	$ 468
Asphaltic pavement repairs	466,251.99	28,289.30	494,541.29	561	882
Bituminous macadam repairs	938,824.64	31,008.63	969,833.27	1,272	762
Oiled macadam repairs	2,302,585.16	302,064.64	2,604,649.80	2,411	1,080
Untreated and graded, repairs	95,954.72		95,954.72	233	412
Base and sub-base repairs	50,481.46		50,481.46		
Shoulders					
Blade, patch, retreat	392,084.75		392,084.75		
Sidewalks, islands, curbs	7,285.59		7,285.59		
Drainage					
Ditches	405,036.85		405,036.85		
Drainage tunnels	38,735.01		38,735.01		
Pipe culverts, siphons, flumes	93,010.74		93,010.74		
Structures					
Box culverts and bridges, 20 ft. and under in length	26,862.12	32,399.81	59,261.93		
Bridges longer than 20 feet	325,287.08	86,432.90	411,719.98		
Guard fence and sight posts	142,655.92		142,655.92		
Tunnels, roadway	1,695.90		1,695.90		
Retaining walls, dikes, etc.	21,926.60		21,926.60		
Roadbed and Right of Way					
Remove weeds, brush and debris	334,702.58		334,702.58		
Landscaping	22,783.97		22,783.97		
Slides, roadbed and slopes	349,174.96	14,716.54	363,891.50		
Right of way fence and markers, mileposts	1,069.38		1,069.38		
Road approaches	29,186.11		29,186.11		
Traffic Service					
Traffic signals	15,917.29		15,917.29		
Signs and highway markers	138,314.61		138,314.61		
Traffic lines	167,135.67		167,135.67		
Snow removal	498,762.95		498,762.95		
Sanding slippery pavement	389,626.08		389,626.08		
High water: Flag and stake	14,644.94		14,644.94		
Highway illumination	29,725.54		29,725.54		
Road magnet operation	5,181.07		5,181.07		
Road broom operation	5,844.20		5,844.20		
Subtotal	$7,472,267.05	$ 494,911.82	$7,967,178.87		
Maintenance superintendence	182,479.39		182,479.39		
Total	$7,654,746.44	$ 494,911.82	$8,149,658.26	4,822	$1,690

TABLE XIX

Costs of Maintaining Secondary State Highways
Calendar Year 1949

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 22,600.76	$	$ 22,600.76	50	$ 452
Asphaltic pavement repairs	55,434.24	1,848.35	57,282.59	180	318
Bituminous macadam repairs	17,991.07	11,286.87	29,277.95	45	651
Oiled macadam repairs	1,022,602.97	455,234.67	1,477,837.64	1,424	1,038
Untreated and graded repairs	306,925.03		306,925.03	751	409
Base and sub-base repairs	31,318.09		31,318.09		
Shoulders					
Blade, patch, retreat	97,976.38		97,976.38		
Sidewalks, islands, curbs	121.37		121.37		
Drainage					
Ditches	124,462.91		124,462.91		
Drainage tunnels	2,098.25		2,098.25		
Pipe culverts, siphons, flumes	38,373.21		38,373.21		
Structures					
Box culverts and bridges, 20 ft and under in length	18,140.81	8,609.52	26,750.33		
Bridges longer than 20 feet	155,011.04	61,636.92	216,647.96		
Guard fence and sight posts	9,055.82		9,055.82		
Tunnels, roadway	13.68		13.68		
Retaining walls, dikes, etc.	2,346.73		2,346.73		
Roadbed and Right of Way					
Remove weeds, brush and debris	101,749.99		101,749.99		
Landscaping	28.35		28.35		
Slides, roadbed and slopes	76,207.04		76,207.04		
Right of way fence and markers, mileposts	1,031.77		1,031.77		
Road approaches	6,415.12		6,415.12		
Traffic Service					
Traffic signals	468.86		468.86		
Signs and highway markers	35,328.66		35,328.66		
Traffic lines	31,334.42		31,334.42		
Snow removal	148,411.12		148,411.12		
Sanding slippery pavement	44,746.40		44,746.40		
High water: Flag and stake	9,600.36		9,600.36		
Highway illumination	344.95		344.95		
Road magnet operation	1,985.25		1,985.25		
Road broom operation	328.64		328.64		
Subtotal	$2,362,453.29	$ 538,616.33	$2,901,069.62		
Maintenance superintendence	57,625.07		57,625.07		
Total	$2,420,078.36	$ 538,616.33	$2,958,694.69	2,450	$1,208



Mill Creek Bridge on the Warm Springs Highway, 535-ft. steel deck truss on steel towers, Wasco County.

REPORT OF BRIDGE DEPARTMENT

G. S. PAXSON, *Bridge Engineer*

Dollar volume of projects handled during the biennium is the highest in the history of the department. The department participated in the award of contracts totaling approximately $10,396,000 in contract costs. This represents the cost on 128 contracts for 175 structures of all types, including bridges and culverts ranging in cost from a low of $1,000 for a culvert extension to a high of $1,011,271 for traffic interchange structures at the west end of the steel bridge in Portland, and a low of $2,640 for a storage building at La Grande to a high of $1,599,931 for the new highway office building at Salem.

A breakdown of the various classes of work handled and structures built or under construction is as follows:

Group	No. of Jobs	Type of Work	Contract Cost
(a)	76	New bridges and culverts	$ 4,246,046
(b)	4	New highway-railroad grade separation structures	920,088
(c)	8	Highway-highway grade separation projects	1,665,759
(d)	11	Bridges or culverts widened or extended	216,462
(e)	31	Buildings of all types (includes Salem office building)	1,969,736
(f)	19	Maintenance projects (includes painting steel bridges, redecking bridges, etc.)	140,727
(g)	3	City and county bridges	1,040,959
(h)	23	Miscellaneous projects (includes traffic signals, tunnel lighting, street lighting, etc.)	196,021
	175		$10,395,798

Major projects in group (a) are as follows:

Mill Creek Bridge: On the Warm Springs Highway in Wasco County. Contract No. 3049. Awarded August 10, 1948 to Don L. Cooney, Inc., of Seattle, Washington, in the amount of $318,320.00. The structure is 535 feet in length, steel deck truss construction on steel towers. Work on the project started September 8, 1948 and was completed November 18, 1949.

Sauvies Island Bridge: This structure bridges Willamette Slough below Portland and will give the only bridge crossing to Sauvies Island. The present ferry will be abandoned when the new structure and roadway approaches are completed. The structure is approximately 1,200 feet in length, consisting of three 200-ft. steel truss spans over the slough proper and reinforced concrete approach spans on either shore. Contract No. 3105 for the structure was awarded February 16, 1949 to the Gilpin Construction Co., of Portland, in the amount of $809,440.50. Work on the project started March 2, 1949 and will be completed in October, 1950.

North Dillard Bridge: On the Pacific Highway in Douglas County. Contract No. 3313, awarded April 25, 1950 to Tom Lillebo of Reedsport, Oregon, in the amount of $229,329.50. The structure is 504 feet in length, steel deck girder with flanking reinforced concrete approach spans. Work on the project started May 4, 1950 and will be completed sometime in March, 1951. This structure will replace the last remaining major timber bridge on the entire Pacific Highway.

Marion Street Bridge: On the Salem-Dallas Highway over the Willamette River at Salem. Contract No. 3348 awarded May 26, 1950, to Lee Hoffman, Portland, Oregon in the amount of $246,570.00, for the construction of five river piers. Work on the project started on June 13, 1950 and will be completed sometime in November, 1950. This is the first unit of the new bridge and of the Salem Traffic Plan. Additional contracts for the remaining work to be done on the new bridge and existing Center Street bridge, all a part of the Salem Traffic Plan, will be awarded in the near future.

Major projects in group (b) are as follows:

Dewey Avenue Grade Separation: On the Baker-Unity Highway in Baker. Contract No. 3202, awarded July 27, 1949 to Valley Construction Company of Portland, Oregon, in the amount of $434,547.50. The project when completed will eliminate a crossing at grade of the main line Union Pacific Railroad Company tracks and the highway. The tracks will cross over the highway. Work on the project started August 18, 1949 and will be completed sometime in November, 1950.

Delmar Overcrossing: On the relocated Oregon Coast Highway in Coos County. Contract No. 3085 awarded November 16, 1948, to Tom Lillebo of Reedsport, Oregon, in the amount of

$182,480.00. The new structure carries the highway over the Southern Pacific Company's Coos Bay Branch tracks. Work started on the project November 22, 1948 and was completed on October 21, 1949.

Sundial Grade Separation: On the relocated Columbia River Highway in Multnomah County. Contract No. 3113 awarded March 8, 1949 to Carl M. Halvorson of Portland, Oregon in the amount of $526,131.50 for the structure and 0.89 miles of highway roadbed. Contract cost on the undercrossing structure proper was $231,800.00. The new structure carries the Union Pacific Company's main line tracks over a 4-lane section of the Columbia River Highway. Work on the project started in July, 1949 and was completed in May, 1950.

Major projects in group (c) are as follows:

West End Steel Bridge: On the Pacific Highway West in Portland. Contract No. 3094 awarded December 12, 1948 to Kuckenberg Construction Company of Portland, Oregon, in the amount of $1,277,597.30, for the construction of approach ramps to the upper deck of the Steel Bridge and the grading, surfacing and paving of roadways in the vicinity of the ramps. Work on the project started on January 3, 1949 and will be completed sometime in November, 1950. Completion of this contract will complete the major work of the realignment of the Pacific Highway West on the west side of the Willamette River and through the City of Portland.

Tillamook St.-Broadway Bridge Section—On the Pacific Highway West in Portland. Contract No. 3236 awarded September 29, 1949, to C. J. Montag & Sons, Portland, Oregon, in the amount of $865,911.50, for the construction of the first unit of the realignment of the Pacific Highway West on the east side of the Willamette River in Portland. Principal structures on the project are an undercrossing of Broadway Street at the east end of the Broadway Bridge, 1,200 lin. ft. of viaduct on Interstate Avenue and a pedestrian subway near Broadway Street. Work on the project started September 30, 1949 and will be completed in December, 1950.

Major projects in group (d) are as follows:

McCord Creek Bridge: On the relocated Columbia River Highway in Multnomah County. Contract No. 3239 awarded October 25, 1949 to Lindstrom Brothers, Inc. of Portland, Oregon, in the amount of $95,365.00. Work started on the project on November 2, 1949 and will be completed sometime in November, 1950. The original structure was built as a part of the original Columbia River Highway. Alignment of the new highway was such that the original structure could be used by widening it from an 18-foot to the present day standard for interregional highways of 30 feet for two-lane traffic.

Umatilla River Bridge: On the Columbia River Highway near the town of Umatilla in Umatilla County. Contract No. 3265 awarded December 19, 1949, to Archie R. Averill of Portland, Oregon, for widening the existing structure to 30 foot roadway and two 3 ft. 6 in. sidewalks. Work on the project started January 11, 1950 and will be completed in September, 1951.

Major project in group (e) is as follows:

Salem Highway Office Building: In the Capitol Group in the city of Salem. Contract No. 3250 awarded November 8, 1949, to Sound Engineering and Construction Company of Seattle, Washington in the amount of $1,599,931.00. Work on the project started on November 29, 1949. The building is approximately 40 per cent complete as of July 1, 1950 and it is expected to be ready for occupancy about the first of March, 1951.

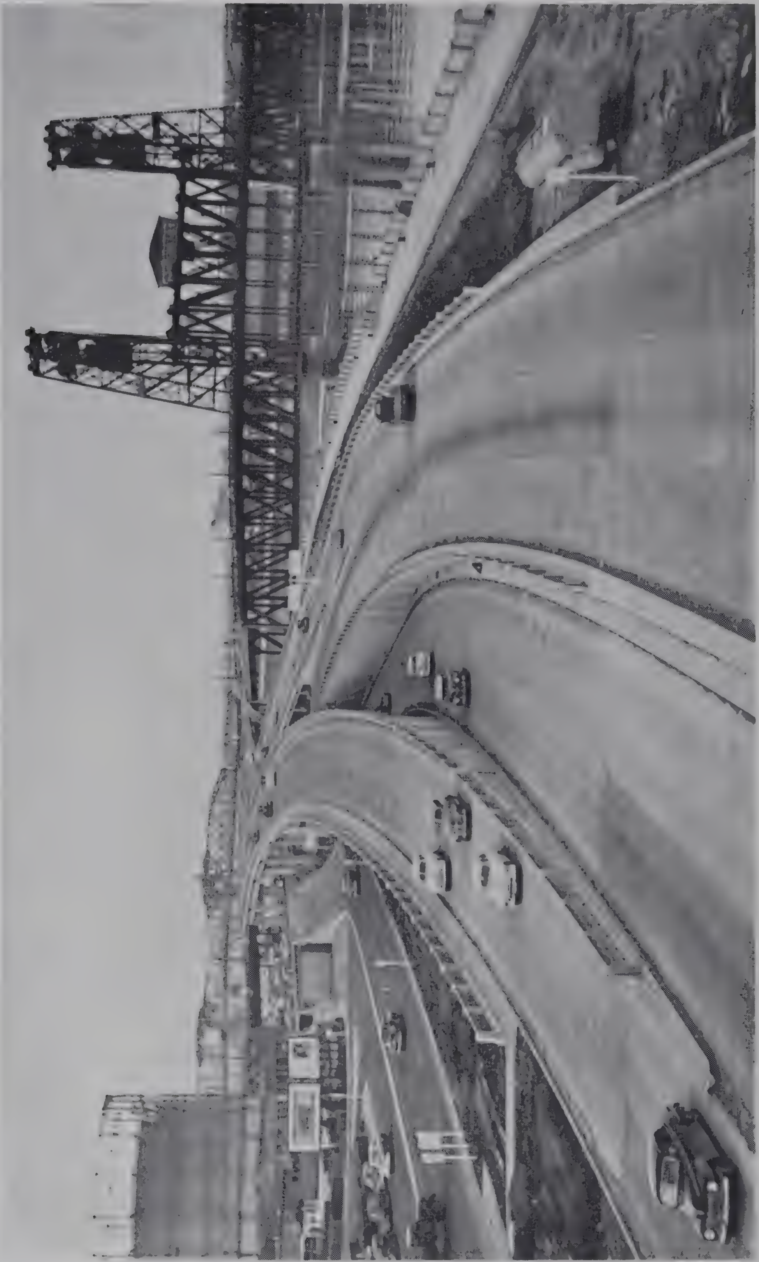
Major projects in group (g) are as follows:

Ferry Street Bridge: Over the Willamette River on the Eugene-Coburg Road in Eugene. The project is being built under a cooperative agreement between the State and Lane County. Contract No. 3196 awarded July 5, 1949 to Tom Lillebo of Reedsport, Oregon in the amount of $447,885.00. The structure is 796 feet in total length, the river crossing consisting of one 442-ft. continuous steel truss with approach spans of reinforced concrete. Work on the project started July 14, 1949 and will be completed sometime in June, 1951.

East Eugene Overcrossing: On the Eugene-Coburg County Road in Eugene. The project is being built under a cooperative agreement between the State and the City of Eugene. Contract No. 3322 awarded May 11, 1950 to Tom Lillebo of Reedsport, Oregon in the amount of $462,124.75. The structure consists of 850 feet of 4-lane viaduct, one 2-lane approach 235 feet in length, another 2-lane approach 210 feet in length and 192 feet of retaining wall, all reinforced concrete. The project also includes grading, surfacing and paving approximately 0.51 miles of highway roadbed. Work on the project started May 1, 1950 and will be completed sometime in September, 1951.

Rogue River Bridge: At the request of Jackson County, plans and specifications were prepared for a bridge crossing the Rogue River on a county road near the town of Rogue River. The Highway Commission called for and received bids on the work for the County on September 29, 1949. The County awarded a contract for the work to Lindstrom Brothers, Inc. of Portland, Oregon, in the amount of $130,950.00. The structure consists of one 200-foot through steel truss span and 233 feet of reinforced concrete approach. Work on the project started in October 1949 and will be completed sometime in October, 1950.

The activities of the department during the biennium have been under the direction of G. S. Paxson as Bridge Engineer, with M. Stephenson, E. G. Ricketts, O. A. Chase and W. A. Reeves as principal assistants. The present design and office force consists of 22 structural designers, draftsmen and general office help. The field force consists of 37 resident bridge engineers and structural inspectors and a foundation investigation crew of 2 men.



Three-level approaches at the west end of the Steel Bridge, U. S. 99W in Portland.

REPORT OF TRAFFIC ENGINEERING DIVISION

F. B. CRANDALL, *Traffic Engineer*

During the past biennium functions of the Traffic Engineering Division have been continued with the same internal organizational structure as in the past. Through long experience, the work and responsibilities of the Division have naturally and logically been catalogued in one of two phases or areas of concern, current short-term traffic control operations, and long-range aspects and compilation of statistics necessary in planning highway facilities as will best serve the future and seemingly ever-increasing traffic demands of motor transport.

The organizational breakdown corresponding to the two phases of work are the Traffic Control and Planning Survey sections. These two sections maintain close coordination to the extent that the Traffic Control section draws heavily on the Planning unit for basic statistical information as may be required. The nature and scope of operations carried on as between the two subdivision units are set down hereinafter.

Traffic Control

All problems and assignments coming into the Traffic Control Section are made the subject of analysis and final recommendation in accord with the scope or seriousness of the particular problem. In all investigations the factual tools of the traffic engineer—traffic volumes, speeds, accidents, and physical conditions—are brought to bear in order that the final solution will be one based upon facts rather than opinion.

The traffic accident report is one of the basic sources of information used in treatment of the traffic problem. The complete analysis of traffic accidents is important not only for the value that may be derived from mass statistics, but also the bearing which such information may have on small unit studies and investigations looking to proper control measures or treatment of a particular location. The Secretary of State is, by law, the prescribed repository for accident reports. Through long-standing arrangement however, the Traffic Engineering

Division has been permitted use of the reports for a sufficient period to make an analysis thereof through codification and transference of data to Hollerith punch cards. The transference of data to the punch cards and subsequent manipulation through the medium of International Business Machine equipment permits quick compilation of statistical summaries and such special factual correlations as may be required.

The use of accident data as compiled is by no means restricted to the Traffic Engineering Division. Regular statistical reports are furnished the Secretary of State in the form of monthly, quarterly, semiannual and annual summaries for use of that office in its safety education activities. Similar service is afforded the city of Portland, such service being reimbursable on a cost basis. Requests for accident information on the part of the counties or cities are cared for as a service rendered. As an indication of the volume of work handled in accident analysis, it may be stated that during the 2-year period July 1, 1948 to June 30, 1950, there was a total of 130,187 reported accidents which were processed. This compares with a total of 126,363 reported accidents for the 2-year period immediately preceding, July 1, 1946 to June 30, 1948.

During the postwar years there have been increasing need and demand for traffic signals at the various intersections on the state highway system. In treating of these requests, two things are considered in making the investigation and final recommendation: (1) Warrant for signalization and, (2) presuming the warrants are met, the determination of priority in the light of other potential installations. In regard to the need for signalized control, warrants for signalization as prescribed by the American Association of State Highway Officials are adhered to. These yardsticks, as set forth in the Manual of Uniform Traffic Control Devices, have been accepted nationally and are prescribed in detail with respect to vehicular and pedestrian volumes, accident experience, etc. The second consideration, namely priority considering the state highway system as a whole, is determined through comparison of the composite warrant as between the potential signal projects over the entire state highway net. For those signal projects authorized by the Commission, the Traffic Division prepares the detail plans and specifications for use of the Maintenance Division in the instance of state force installation, or for the Bridge Division in the instance of contract projects.

During the biennium, investigations were made at 77 locations in 22 cities and at 13 rural intersections. Installation of traffic signals was approved at 41 intersections in 10 cities and at seven rural intersections. Investigations with respect to flashing beacons were made at 26 intersections during the biennium, with installations approved at 11 intersections.

Engineering investigation, with respect to speed zones, is a function of the Traffic Engineering Division. Such investigations and recommendations are performed for the State Speed Control Board in the case of urban highway extensions, city streets, and county roads, and for the State Highway Commission in the instance of rural state highways. Speed zone investigations during the biennium involved some 80 miles of streets and highways.

The Highway Department cooperates with the office of the Secretary of State in the organization and establishment of schoolboy patrols. If circumstances are such as to warrant the establishment of a patrol, the Highway Department supplies the necessary equipment, i. e., yellow helmets, Sam Browne belts, signs, etc. During the biennium some 36 locations were investigated with patrols approved at 25 locations.

The Traffic Division has continued to work closely with the personnel of the Construction Division in order that projected improvements may incorporate the utmost in safety and ease of movement. During the past biennium and in the field of geometric design, considerable time and effort have been directed toward construction of scale models of proposed highway improvements which have proven of value in pointing up desirable revisions in design as well as affording a medium of public education and understanding of projected new facilities. Models of a number of projects have been made during the biennium. Among these were models of the improvement of Union Avenue north of Portland and the model of proposed traffic improvements in the city of Salem.

The Traffic Division endeavors to keep in close touch with critical situations which may arise from time to time, review accident statistics and other pertinent factors, and initiate appropriate measures in the form of minor channelization, signing, signalization, or such remedial measures as seem in order. Continued attention has been given to measure merit of the effect of traffic improvement through "before and after" studies. This type of study affords a check or measure of the efficacy of a particular treatment and thereby adds to the store of knowledge and experience which serves as a guide in treatment of similar problems which may arise, and also affords data for use in public relations work. Such studies do much to resolve the opinion of the layman and give factual aspect to the particular problem.

Planning Survey

The Panning Survey section is the principal source of basic data as are necessary to formulation of both short- and long-range studies in the field of highway design, highway economics, and traffic control operation. The moneys for Planning Survey operations include federal aid matching funds in the same pro rata as established for federal contributing funds on construction work. The basic data derived from Panning Survey operations find extensive use at the national as well as state level. The Bureau of Public Roads utilizes basic information supplied from the several states in mass statistical form in the development of nationwide policies and criterion for intelligent development of the nationwide transportation system. The use of data as collected from several states finds expression in many research projects carried on and reports with respect thereto. The cycle tends to be completed in that the individual states derive considerable benefit and knowledge from such research endeavors in the programming and establishment of policies at state level.

One of the principal activities from the standpoint of personnel and money expenditure is the statewide traffic counting operations. During the course of the past biennium, certain revisions have been made in the operating schedule and counting methods, notable of which is a general change-over from an extensive program of manual counts to one utilizing automatic equipment. This change-over has been made gradually in order not to lose continuity of data necessary in the development of long-range trends which are primary factors in making traffic forecasts and in development of a long-range highway program.

To review briefly changes in counting procedure, during the first 18 months of the biennium the program of manual count operations was carried on much as in preceding years. During this 18-months period regularly scheduled manual counts were obtained at 106 stations over the rural state highway system. Traffic at these 106 locations was counted one weekday in the quarter-point month, namely February, May, August, November. Beginning January 1, 1950 the number of manual count stations was reduced to 86 and at the same time the schedule of counts was reduced to one weekday count in each of the two months, March and August.

In lieu of the more extended schedule of manual count operations an ever-increasing use has been made of automatic counter equipment. The expanded schedule of counts utilizing automatic equipment was started early in the biennium and gradually developed in such manner that there would be an overlapping of the extended manual count schedule to provide a cross-tie and thereby preclude any break in continuity of data so necessary to development of long-range trends. At the close of the biennium there were in operation seven permanently installed automatic traffic recorders inclusive of five permanent machines in operation since 1937, plus two additional purchased and installed in 1949. In addition to the foregoing, it is planned to install an additional eight permanent machines by the close of 1950.

Supplementing permanent automatic traffic recorders some 24 recording and 73 non-recording type portable counters are presently being operated. Use is being made of the recording type portables in the development of data at strategic locations as will eventually be cared for through the installation of permanent machines. With the present program of operation it is possible to obtain traffic counts of varying time length at some 5,000 locations over the highway system in the course of a year.

The change in procedure and method of obtaining traffic audits has made possible a more comprehensive coverage of the state road net than was possible with the less extensive but costly manual count operations as previously carried on. The use of automatic equipment affords much greater coverage and more reliable data with respect to total vehicles which more than offsets such loss as may derive due to partial curtailment of the manual counts. It is believed that the skeletonized schedule of manual counts as has been retained offers a sufficient sample with respect to vehicle classification to serve the needs and it is sincerely believed that much better departmental service can be rendered for dollars expended.

With respect to urban traffic audits the manual count schedule as carried on in some 33 cities throughout the state was discontinued as of January 1, 1950. This urban count schedule was discontinued only after considerable study and delibera-

Improvement of Oregon Coast Highway between North Bend and Coos Bay.

tion. This unit of work required a sizeable expenditure of moneys and it was felt that the data obtained and the use thereof were not commensurate with such expenditure. In lieu of such procedure it is believed that wherever such data are required this can be made a special unit of work and with respect to the particular city involved. Some thought is being given to installation of permanent automatic recorder equipment in certain of the cities as will afford continuing large sample data for use in the development of expansion factors for short-term urban counts.

The traffic count data are compiled in yearly bulletin form for intradepartmental use as well as distribution to outside agencies interested in this particular information. The transition from extended manual count procedure to one of utilizing automatic equipment, as stated before, has afforded much more comprehensive and complete information which is reflected in the most recently published report, Oregon State Highway Technical Report No. 50-1, which tabulates the traffic data as obtained during the year 1949. The revised counting procedure also has resulted in a more detailed and accurate traffic flow map as is prepared yearly.

Road inventory survey operations, as reactivated in the fall of 1947, have been continued through the biennium. The work schedule as formulated in 1947 contemplated a re-inventary of the street and highway system of the entire state to be completed in a 5-year period. Actual progress, however has not kept pace with such schedule, due primarily to inability to obtain qualified personnel to carry on certain phases of the work, notably drafting personnel. The prime purpose of the road inventory operations, as the name implies, is to keep a complete and, insofar as possible, current record of all public ways in the state. In addition to establishing physical location and alignment of the road net, detailed information is obtained with respect to the roadbed section and also with respect to roadside culture, such as farm houses, residences, business establishments, saw mills, churches, schools, etc. These data, transferred to map form, find extensive use not only within the Highway Department but other agencies as well.

To date field inventory has been completed in some eleven counties in the state. The total mileage in the eleven counties that have been inventoried amounts to some 12,500 miles or 20 per cent of the total mileage of public ways within the state. The information as obtained in the field is transferred to Cardex files for permanent and ready reference. The Cardex system readily adapts to corrections and changes as may occur, or when field re-inventory of any road or street is made. Data are also placed on IBM punch cards for ready adaptation to special studies as may be made involving the physical features of the road-street net.

One of the final products and uses made of the inventory data is preparation of the county highway and transportation maps. The inability to maintain adequate personnel in the cartographic work has been the basic reason for the inventory work falling behind the desired schedule. At the present writing only one county has been completed to the point that maps are available for distribution. Completed maps for five additional counties should be completed and ready for use and distribution shortly. Considerable concern has been felt over the lag in the mapping program. This for the reason that during World War II this agency was looked to for this type of information and a considerable volume of maps was supplied at that time to military agencies as well as public agencies either directly or indirectly connected with the war effort. With the present world situation, if there should again develop a demand for map service such could not be rendered to the extent desirable.

The bridge inventory operation as carried on is a corollary part of the road inventory with such field work as is done being performed by personnel of the bridge department. The bridge inventory work provides detailed record of bridge structures on all public roads and highways, not only with respect to location, but data on general type, stream names, length of span, vertical and horizontal clearances, and construction features. Due to circumstances of personnel no great amount of work has been done in this particular phase of Planning Survey operators.

A phase of Planning Survey activity which had laid dormant for some time and which was reactivated during the biennium was that of Road Cost and Earnings reports. The purpose of this particular endeavor is to provide a continuing record such as will show, both for the highway system in its entirety and component parts thereof, the degree to which the highway system or sections thereof are "paying their way." Put in somewhat different words and with respect to a particular section of highway, this record related the sum total cost of a particular section to the revenue accruing in the form of fuel tax and other transportation imposts. The relation of these two items results in an index or solvency quotient useful in programming moneys to the end that constrution moneys may be programmed in an equitable manner. As indicated, this particular work was reactivated during the biennium and during the course thereof reports for the years 1947 and 1948 were completed and published, with the 1949 data to be available shortly.

In recent years, and with respect to the planning of transport facilities, the type of study which is coming more and more into use is that of the Origin-Destination study. Basically and rather simply, the Origin-Destination survey, with respect to a particular area, determines the desire for movement and the paths thereof, of people and goods. Such a study, superimposed upon the existing road network, serves as a very useful guide in proper development of the road net as will best serve vehicular transport.

The largest single Origin-Destination project that has ever been undertaken by the department was that of the city of Portland. Although field work and the compilation of data for this report were completed previous to this biennium and extensive use made of the information, the final editing and publishing of the report was not completed until the early part of the current biennium. This report was most useful as a reference in predetermining the principal incidence of traffic volumes on projected new facilities in the Portland metropolitan area. A companion study to that of the Origin-Destination was the Portland Parking Study which has been completed and published, and which has served as a valuable reference in the planning of parking facilities which in turn have considerable bearing on the development of the arterial network in the Portland area. Over and above the Portland studies several other Origin-Destination surveys of considerably lesser scope were made in connection with specific problems. One such was the study made in the city of Salem in connection with the projected trans-Willamette River facilities and improved arterial routes in the Salem area generally. The Salem study was in reality comprised in two separate surveys, the first being a very skeletonized survey conducted in the summer of 1948 at which time approximately a 20 per cent sample of traffic was obtained and the second and more extensive survey, conducted in the fall of 1948, at which time a sample approaching 100 per cent was obtained in the field operations. It is of interest to note that quantitive values as between the two surveys were practically identical. Another Origin-Destination survey of very limited scope was that as obtained on U.S.99 in the Springfield vicinity. There are projected plans for re-alignment and betterment of route U.S.99 in this area and the data obtained from the Origin-Destination survey will no doubt have considerable bearing on the ultimate treatment. The short-term, lesser scope Origin-Destination study of the type conducted in the Springfield vicinity is typical of localized studies as were made at other location, notably in the vicinity of Ferry Street Bridge in the City of Eugene, and U.S.99 in the vicinity of Canyonville.

Over and above the major sub-phases of Planning Survey operations as covered herein above, there is a multiplicity of continuing statistical compilation work in the field of fuel consumption, vehicle registration, road mileage reports, truck weight studies, and out of state vehicles. These lesser endeavors are routine and continuing in nature and supply needed information necessary to proper and intelligent highway administration and the evaluation of current needs and programming for the future. There are many special studies of particular interest to the Bureau of Public Roads, carried on at their request, and which are desired for use at the national level both in the field of research and legislative work.

REPORT OF MARTERIALS DEPARTMENT

G. W. HARRA, *Engineer of Materials*

The purpose and primary objective of the Materials Department are to provide the Commission and its engineers with facts concerning materials of construction so that highways, bridges and buildings may be built and maintained economically and have lasting service. In carrying out this objective, the Materials Department performs five functions which are:

1. To determine the quality of materials and assure that only those materials that meet the specified requirements are used.
2. To proportion materials for economy, strength and service.
3. To assure that the materials are used in the proportions designed.
4. To assure that the final result has the qualities specified.
5. To conduct research on new materials, methods of test, application, and causes of failure.

Quality of Materials

Considering the first of these functions, it is indisputable that quality may be determined only by test. In order to perform such tests, the Department has been provided with a well-equipped laboratory at 2900 State Street. Because of the variety of types of material required to be tested, the laboratory is subdivided into several sections. The personnel in each section is highly specialized through training and experience to perform that particular type of testing and they have become authorities in their fields. Thus, reliability of tests is assured. An engineer and an aide are employed full time in the soils section where samples of soil and base materials are tested for physical characteristics and bearing qualities. Three engineers are employed full time in the chemical section in which samples of paints and lacquers are analyzed for ingredient content and physical characteristics and in which, also, samples of cement, creosote, treated lumber, zinc coatings, ferrous and non-ferrous metals are chemically analyzed. The oil and asphalt section employs one engineer full time and two aides part time. In this section, samples of asphalt, asphaltic mixtures, asphaltic coated materials, and lubricating oils are analyzed to determine physical characteristics. Two engineers are employed full time in the aggregate section where samples of fine and coarse aggregates, quarry rocks, and bituminous mixtures are tested for physical characteristics. The cement section employs one full-time engineer who tests samples of cement, concrete, and steel for compressive and tensile strength. One engineer is employed full time designating the various tests that are to be made on each sample as it is received. The reporting of results of tests and the keeping of records are done under the direction of an office engineer. In all, 35,247 samples of materials have been tested by the laboratory in the last two years.

Regardless of the reliability of tests in the laboratory, the results are of no value unless they are also valid. Since a test result is valid only insofar as the sample is valid, the Materials Department receives only samples taken by quali-

Table Rock Creek Section on the Baker-Homestead Highway, Baker County.

fied personnel. For this purpose an inspection office is maintained in Portland and two qualified engineers are employed full time to sample materials originating in that area. These engineers also inspect shipments of materials, represented by the samples, and observe fabrication processes for conformance with various specified requirements. In the field, where the Materials Department is responsible for the outcome of mix designs such as concrete strength and workability, department employees are assigned to take samples. For other sampling, the Materials Department has issued a pamphlet which explains in detail the approved methods of sampling the various materials encountered.

Proportioning Ingredients

From the results of tests of the ingredients of Portland cement and asphaltic concrete, which ingredients are always sampled and tested in advance of actual construction work in the field, the engineer of materials or his assistant designs the mix or proportions of ingredients that are to be used in each specific project. This mix is designed on the basis of strength required and the characteristics of the aggregate materials available. The materials engineer or his assistant observes the actual construction at frequent intervals and may change the mix to conform to changing aggregate characteristics or other construction conditions. The engineer of materials also assists the engineer on the job in any way he can on problems regarding materials.

Inspection

In order to assure that materials are used in the proportions designed, the Materials Department employs four engineers and aides full time as well as several part time aides, usually college engineering students. These inspectors are stationed at the various asphaltic concrete and Portland cement concrete batching and mixing plants. The duty of these men is one of control. They check the batch weights of all ingredients, periodically test the aggregates for granulometric analysis, and take samples to be sent to the laboratory. They are responsible for the workableness of the mixture and have considerable leaway to change the mix to conform to changing materials, moisture content, temperature, etc. Severe adverse conditions, however, are immediately reported to the engineer of materials who determines whether the mix should be changed to meet the conditions, or whether the conditions can and should be changed to meet the mix requirements.

Quality of Construction

During the process of construction, samples of mixed material are taken by the inspector and sent to the laboratory. When the construction is of Portland cement concrete, 6-inch x 12-inch control cylinders are cast every day for pavement and every four for bridges. These cylinders are cured in the laboratory and tested for compressive strength at regular intervals of age. When the construction is of asphaltic concrete, the inspector takes samples of the mixture daily and sends them to the laboratory where they are immediately extracted and analyzed for ingredient content and proportions. This procedure provides an accurate check on the finished products and any deviation from strengths and composition specified calls for immediate remedial action.

Research

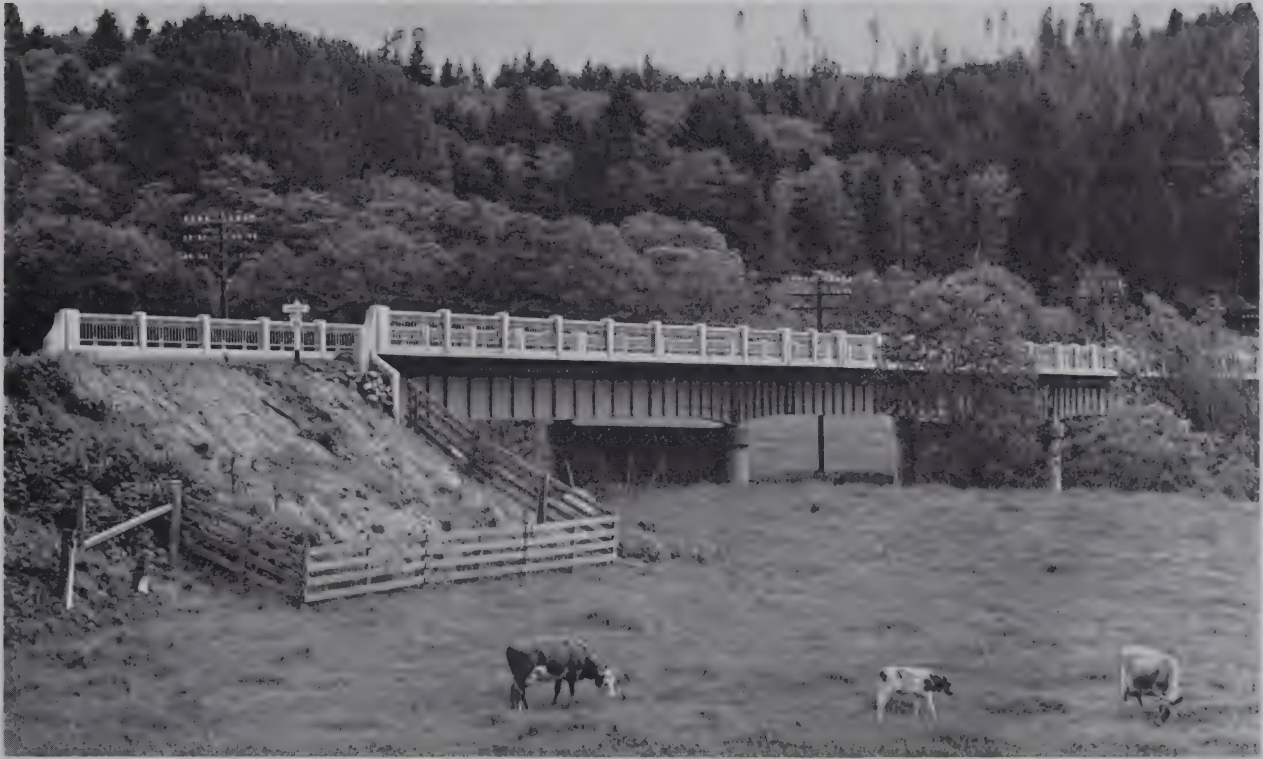
For the purposes of developing methods of test and evaluation of new materials, of determining the cause of certain failures and evolving methods of construction that will eliminate undesirable qualities and failures, and of designing and constructing apparatus that will measure pertinent qualities of materials heretofore unmeasured, the Materials Department maintains a research section which employs a research engineer and one assistant engineer. Projects completed in the last two years, or in process are:

Design and construction of a portable air entrainment meter. Blueprints of this meter were given to an engineering company which is now producing the meter for sale.

Design and construction of a portable meter for measuring the comparative efficiency of centerline stripes.

Mix designs for burnt shale or clay light-weight concrete.
Investigation of pumice for use in light-weight concrete.
Determination of the cause of certain bituminous macadam failures.
Determination of the cause of asphalt flushing in oil mats and bituminous macadams.
Determination of the relative efficiency of air entraining agents.
Determination of the relative efficiency of curing compounds.
Special testing of various materials such as water-proofing compounds and reclaimed asphalt.

C. F. Hagemann is office engineer and Oscar A. White is research engineer.



260-ft bridge over Salmon River on U. S. 101 at Otis in Lincoln County.

REPORT OF LEGAL AND RIGHT OF WAY DEPARTMENTS

J. M. DEVERS, *Chief Counsel*

An institution such as a highway department is always distinguished by rapid growth and development, and there are present at all times problems which call for serious thought and planning. The Oregon State Highway Department is no exception. The building of public highways is an essential governmental activity. The states individually and collectively through the Bureau of Public Roads are engaged in that great enterprise.

Transportation by motor vehicle now rivals transportation by rail. Competition between these two systems develops rivalry and conflict. Rivalry and conflict between these two transportation systems provoke and engender argument and conflict between highway officials and the owners and operators of transport by motor vehicle. Freight rates fixed for transportation by rail are in conflict with freight rates fixed for transportation by motor vehicle. Operators of motor vehicles contend that, to successfully compete with rail transport, they must carry a maximum load. It, therefore, often develops that the capacity load which those who use the public highway say they must move in order to successfully compete with rail movement is greater than highways can stand; hence, there is often conflict between highway officials and motor vehicle operators.

Of course there are operators who realize that an impaired highway is detrimental to their business and they, therefore, tender cooperation with highway officials, but there are operators who pursue a different course.

Experiences gathered during the closing biennium have established the fact that Oregon laws with respect to the movement of property by motor vehicle must in some respects be changed. The Legal Department in cooperation with the Engineering Department is engaged in a study to determine in what respects and for what purpose our laws must be amended or new laws enacted.

Since our last biennial report we have been applying the principles and requirements of the Throughway Law which law was enacted by the 1947 legislature. That law contemplates the construction of highways in connection with which access is prohibited or controlled.

A failure on the part of many to fully appreciate the value and the need for access-controlled highways has resulted and is resulting in controversy and sometimes litigation.

Many fail to distinguish between the denial of access to a new highway and the taking of access to an existing highway. With respect to a new highway access is not in existence, hence the denial of access does not involve a property right; while with respect to an existing highway access exists and hence a property right exists and is involved, which property right cannot be destroyed or taken without the payment of just compensation. The Legal Department hopes soon to have these issues determined by the Supreme Court.

Much of the work of the Legal and Right of Way Departments during the closing biennium has been involved with the acquisition of real properties needed for highway and other purposes. A rough tabulation of work done and transactions

Street widening and paving in Gold Beach, Curry County.

consummated with which the Legal and Right of Way Departments have been involved discloses the following facts:

Litigation

Number of condemnation cases instituted	29
Number of above cases settled or disposed of	16
Number of cases still pending	13
Number of condemnation cases instituted prior to July 1, 1948	61
Number of above cases tried or settled	33

Litigation Other Than Condemnation

Number of cases in which State was made defendant	10
Number of cases in which State was plaintiff	4
Number of above cases tried or settled	11
Number of above cases pending	3

Acquisition of Real Property

		Consideration
Number of transactions involving acquisition of real property for rights of way	1,221	$3,647,053.36
Number of real properties acquired for quarry and gravel pits	122	72,916.47
Number of acquisitions of real property for stock pile sites	38	10,760.87
Number of real properties acquired for miscellaneous purposes	18	48,584.80
Number of real properties acquired for State Parks	25	142,206.28

The Legal Department during the closing biennium has rendered to the Highway Commission the following legal services:

Number of construction contracts examined and approved	324
Number of resolutions prepared covering abandonment of sections of rights of way	40
Number of agreements prepared on the subject of abandonment of rights of way	15
Number of miscellaneous agreements prepared	240
Number of resolutions prepared	47

During the coming session of the legislature the Legal Department will represent the Highway Department in the examination of bills proposed which may in any way affect highway finance or any problem related to the Highway Department functions.

Shore line within the new Samuel H. Boardman State Park, Curry County.

REPORT OF OREGON STATE PARKS DEPARTMENT

C. H. ARMSTRONG, *State Parks Superintendent*

Beginning in the current biennium, state park administration was marked by a number of changes for the better care and conduct of Oregon's state parks which in recent years had increased in area and usage beyond the capacity of previous personnel and equipment to adequately meet the rising standards of public requirements.

The principal administrative change was the division of the state into five districts, more or less corresponding to the divisional units of the highway maintenance department, with a resident supervisor in control of each district and all its activities, reporting to the newly appointed assistant state parks superintendent, now in the Salem office of the Parks Department.

In the annals of state park history June 30, 1950, will be noted as the retirement date of Samuel H. Boardman as State Parks Superintendent, after 21 year of active park service. His appointment to this position, in 1929, followed 10 years of employment in construction and maintenance work in the Highway Department. When appointed to this position, there was a nucleus of 46 park areas aggregating 5,070 acres; since increased to 181 units totaling over 69,000 acres, owned by the state or controlled under long-term leases granted to the Oregon State Highway Commission by Federal agencies up to October, 1950. Of this total, 3,351.69 acres were acquired in the 1949-50 biennium.

The major acquisition of this biennium is the elongated, narrow strip of shoreland, extending along the south Curry County coast line from Crook's Point on the north to a point near the Harris Beach State Park, two miles or so north of Brookings, a distance of about 12 miles. Most of the area has been deeded, with a few options still pending to complete the designated area. Its completed acquisition will put Oregon in possession of one of its most primitive and attractive ocean frontages. Three park areas; Cape Lookout, Short Sand Beach and Saddle Mountain, have been selected and designated as other representative wilderness areas to be left in their pristine state.

In 1946 the Portland Chamber of Commerce and the Oregon Roadside Council petitioned the Oregon State Highway Commission to officially designate the above mentioned Brookings-Harris Beach area as the "Samuel H. Boardman Park." This request was approved by the Commission August 22, 1950. For years Mr. Boardman had cherished a hope to see this attractive shoreland become a state park, a hope that was almost fully realized before his retirement. Its naming in his honor was a fine tribute to his faithful service and a fitting finale to a long unbroken, and highly creditable, park career.

Historically, the most important geographical feature of this park is Cape Ferrelo, named for Bartolome Ferrelo, a pilot who succeeded Cabrillo in command of an expedition that sailed from Mexico in June, 1542. Ferrelo found himself on March 1, 1543, up to the 44th parallel, but on the following day was driven south by bad weather. He did not report the cape himself, but his name became attached to it in later years.

On the date of this report, the present supervisory staff numbers 18 persons. There are 43 park caretakers and 21 laborers on a year-round basis, with 11 seasonal workers and 61 temporary laborers who worked 30 to 60 days in 1949. Classified as laborers, are two 2-man mobile construction and repair crews of versatile qualifications, and a skilled stone mason who performs when and where needed.

The biennium has been a period of structural activity and extensive surface improvements throughout the park system. At Shore Acres the old Simpson home was razed and a frame observation shelter was construction on the site from salvaged material. A new metal roof and upper and lower deck waterproofing were placed on the Crown Point Vista House. The building at the Sodaville Spa was reshingled, and the concession building at Silver Falls was improved for more adequate service to the public. In The Cove Palisades Park, a park road traverses the east rim of the Crooked River Canyon northward to the summit of Round Butte. Along three miles of this canyon rim road, spaced some three-fourths of a mile apart, are four protruding rock points which command especially fine views of the interesting scientific and geological features of the park section of the Crooked River Canyon. These parking places have been smoothed, surfaced with red volcanic cinders, and the abrupt rim made safe by a masonry parapet two feet high and of like width. Round Butte, affording a wonderful evening view, is frequented by visitors and settlers on the surrounding irrigation project. Some of the other major betterment accomplishments during the biennium were:

Custodian homes with garages	6
Work sheds	4
Water systems	16
Power systems	3
Road entrances and parking areas	21
Shelter kitchens	8
Coin metered electric stoves	15
Large latrines	12
Dressing shelter	1
New tables	428
Rock stoves and incinerators	35
Exhibit buildings (Collier Park Museum)	5
Snags felled	1,190
New trails (lineal feet)	1,000
Trails and roads reconditioned (lineal feet)	16,000
Stone walls (lineal feet)	630
Stone guard posts (lineal feet)	1,800

A continued steady increase of visitors to state parks was shown by the estimated attendance figures. Following is a 3-year comparison of attendance records:

1948	2,068,393
1949	2,840,750
1950 (to October 1)	3,230,466

REPORT OF LANDSCAPE DEPARTMENT

MARK H. ASTRUP, *Landscape Engineer*

The Landscape Department was established as a separate unit of administration of the Highway Department in September, 1948. It is under the supervision of the Landscape Engineer who is responsible for:

a. General supervision of all roadside improvement projects, including preparation of plans and cost estimates.
b. Participation in the locating and plan development of stockpile sites, maintenance station sites, historical markers and other facilities constructed on the highway right of way.
c. Supervisory control over the planting, growing, cutting and trimming of vegetation on highway rights of way.

The functions of the Landscape Department broadly stated include: assistance in improving traffic safety, in the provision of traffic and driver services, in improving the appearance of our highways and, through erosion control measures, in the reduction of maintenance costs. The work is accomplished under the direction of Mark H. Astrup, Landscape Engineer; E. A. Meola, G. W. Wharton, G. W. Johnson, D. Q. Haskins, Lanscape Architects; and Betty Evenson, Stenographer.

The construction of roadside picnic areas has been a major innovation of policy during this biennium. To date, 20 picnicking areas have been developed along major highways for the convenience and enjoyment of highway users. All are equipped with safe off-highway parking areas, picnic tables and garbage cans, and some have either or both toilet facilities and drinking water development. Although roadside picnic areas are assentially a driver service, they also promote good will and safety by furnishing safe and pleasant places in which to park for rest, the eating of lunches, et cetera. Public response to these developments has been enthusiastic and additional locations are planned based on need and availability of funds for construction.

Measures have been taken to solve the problems involved in the control of noxious weeds and unwanted vegetation on highway rights of way. In the control of noxious weeds, agreements were entered into with county agencies whereby they sprayed noxious weeds on highway lands on a reimbursable basis. This cooperative endeavor has proved beneficial to both the Department and county authorities as it has given better utilization of existing spray equipment and of the specialized knowledge required in the application of herbicides. To further standardize and improve Highway Department practices in weed and brush control a 2-day Weed Control Seminar was held at Corvallis in March, 1950, in cooperation with authorities of Oregon State College. The meeting was attended by all District Maintenance Superintendents and instruction was given by members of the college staff on noxious weed identification, control methods and spray equipment. Cooperative experiments have also been initiated with the college to determine the efficacy of the various new selective herbicides for eradication or control of roadside vegetation without harming plants desired for retention. Further trials are necessary before definite conclusions can be determined.

Control of erosion and the building of permanence into roadside areas are major problems of this Department. Solutions have been furthered by the inclusion of planting in an increasing number of construction contracts. Seeding of grass greatly improves the appearance of the roadside and, by eliminating erosion, conserves topsoil, an important natural resource and reduces subsequent maintenance costs.

Several urban planting projects have been undertaken and completed, the largest of them being on the Harbor Drive project in the city of Portland. By agreement, the maintenance of this improvement is to be an obligation of the city.

Pacific sunset as viewed from the Oregon Coast Highway, U. S. 101

REORT OF TRAVEL INFORMATION DEPARTMENT

MANLEY F. ROBISON, *Director*

Fundamental opportunities, for abundant living and the creation of wealth, spring from natural resources. The people of Oregon have an inexhaustible resource in the beauty and recreational appeal of their state. Their mountains, lakes, streams, and beaches, each year attract an increasing volume of tourists from other states who enrich the over-all economy of Oregon by the funds expended in reaching and visiting the recreational areas of their choice.

In contrast to such resources as oil, timber, minerals, and metals, recreational resources are not depleted by constant and extensive exploitation. Oregon's varied stock of natural scenery, historical landmarks, and outdoor activities can be turned to cash year after year with no decline in inventory.

Annual surveys indicate that some 1,560,000 motor cars, licensed in other states, brought vacationists to Oregon during 1949 and 1950. These carried an average of 2.9 passengers who stayed an average of 7.4 days and spent an average of $114.64 for each car. The average mileage driven on Oregon highways by tourists was 832 in 1949 and 744 in 1950.

The estimated value of Oregon's tourist business for the 1949-1950 biennium was 223 million dollars. Income for 1949 was measured at 110 million and for 1950, 113 million. These figures are compared to an estimated 197 million income for the previous biennium, 105 million for 1947, and 92 million for 1948. They include only the expenditures made in Oregon by vacationists from other states and foreign countries.

A carefully organized long-range advertising program designed to present Oregon's attractions in the most appealing manner is carried out each year by the Travel Information Department. Mass circulation national publications, such as the Saturday Evening Post, National Geographic, Collier's American, Holiday, and Cosmopolitan magazines are employed to carry the Oregon vacationland invitation to the people of the nation. To supplement these, 50 major newspapers in California and other western states carry schedules of advertising, emphasizing Oregon's scenery, history, community events, highways, and outdoor activities.

Motion pictures depicting the Oregon scene and advertisements in 15 motor club magazines contribute substantially to the advertising program. Approximately a million people each year view the color-sound films, "The New Oregon Trail" and "Glimpses of Oregon State Parks."

Oregon cooperates with other Pacific Northwest states and adjoining Canadian provinces in maintaining a booth representative of the area at five of the major travel shows of the middle west and California. Combined attendance at these shows is approximately 900,000 each year. Maps and booklets are made available to those planning trips by the area representatives in attendance.

During the biennium the department has received 232,803 direct mail inquiries. Each inquiry was serviced with booklets descriptive of all of Oregon and also with printed material on specific resorts and communities when requested. Approximately two million booklets and maps were distributed by direct mail and through the offices of motor associations, tour

Section of the Joseph-Wallowa Lake Highway reconstructed in 1949.

bureaus, chambers of commerce, and travel agents during the 2-year period.

The department joins each year with the major chambers of commerce of the state and the Oregon Advertising Club in a program designed to encourage friendly and fair treatment of visitors. Managers and employees of hotels, motels, restaurants, service stations, and other elements of the service industries are invited to meetings and reminded by speakers and motion pictures of the things of interest in the state and in their particular area. They are urged to be prepared to courteously answer the questions asked by tourists.

An advisory committee, comprised of community leaders from various sections of the state, establishes the operating policies of the department, and recommends advertising procedure to the Highway Commission and Engineer. Members of the committee, several of whom have served since the department was established in 1936, are:

John A. Laing, Chairman	Portland
E. B. Aldrich	Pendleton
Hugh Ball	Hood River
Ralph A. Coan	Portland
Ralph R. Cronise	Albany
Herb Grey	Medford
George M. Henderson	Portland
Frank Jenkins	Klamath Falls
Fred E. Kiddle	Island City
Arden X. Pangborn	Portland
Arch B. Sanders	Coos Bay
Donald J. Sterling	Portland
Wm. M. Tugman	Eugene

Bridge over Coast Fork Willamette River north of Cottage Grove, Lane County.

Willamette Highway structure over the new railroad grade at Meridian Dam, Lane County.

REPORT OF ACCOUNTING DIVISION

M. H. HAWKE (C.P.A.), *Comptroller*

The years from July 1, 1948, to June 30, 1949, and from July 1, 1949, to June 30, 1950, brought about extensive changes in the accounting program. During this 2-year period the receipts of the Commission increased $9,953,249.85 over the previous biennium to a total of $58,443,542.91, while the total expenditures increased $21,115,370.77 over the previous biennium to a total of $69,272,349.49.

It is the responsibility of the Accounting Division to account for all receipts and expenditures, to verify each of the claims comprising the expenditures, as well as to record such receipts and expenditures in the proper control accounts, and detail accounts.

In addition to the responsibility of accounting for receipts and expenditures, the enactment of the withholding tax acts, both federal and state, the public employees retirement system, and the civil service system, have place a heavy burden upon accounting divisions in the State Departments. Not only must adequate records be kept of the receipts and expenditures with correlated controls and independent checks, but adequate records must be kept on each employee for:

1. Federal withholding tax.
2. State withholding tax.
3. State retirement contributions.
4. State civil service classifications and pay scales.

Organization

The Accounting Division staff consists of 55 employees whose headquarters are in a temporary building at 2900 East State Street, Salem. The offices will be moved to the fourth floor of the new highway office building when that building is completed in the spring of 1951.

To more efficiently accomplish its program, the accounting staff is divided into five sections, with a supervisor in charge of each section. Each supervisor is responsible to the comptroller and his assistant. The five sections are as follows:

1. Requisitions and invoices.
2. Pay rolls.
3. Claims vouchering.
4. Bookkeeping.
5. Costs accounts.

The sections are so arranged and the work is so outlined as to produce the highest potential efficiency from a straight line production method. Generally speaking, the work documents flow from sections 1 and 2 to section 3, then to section 4, and finally to section 5. Theoretically, an invoice is received in section 1, and the remittance is forwarded by section 4.

The requisitions and invoices section is responsible for verifying all vendors' invoices. To accomplish this, the accounting system provides a receiving record which is submitted by the employee who receives the merchandise or supplies. By comparing the purchase requisition, the invoice and the receiving record, a control is established on the items billed.

The pay rolls section is responsible for verifying the time reported on monthly time reports. The verification extends only as far as the gross amount earned, but includes time worked, work classification, and rate of pay. The performance of these duties involves the handling of an average of 213 monthly time reports, and an average of 736 personnel action forms per month.

The claims vouchering section is responsible for auditing all employees' expense statements, contractors' estimates, and pledged pay roll deductions. The last item includes hospital association fees, group insurance, and savings bonds. The section is also responsible for preparing all vouchered claims. In other words, the data on invoices and estimates are transcribed by typewriter, to the voucher forms. During the biennium ended June 30, 1950, the volume of this work involved 43,935 claims to persons and firms outside the Department.

The bookkeeping section is responsible for recording the transactions of the Department in books of original entry and for posting to ledgers. The ledgers consist of the general ledger, accounts receivable ledgers, equipment ledgers, gasoline and oil and grease inventory ledgers, expenditures ledgers, budget ledger, and property ledgers. The section is also responsible for preparing journal entries for inter-department and inventory transactions. During the biennium ended June 30, 1950, the business of the department required 6,285 journal entries. At the present time the work of this accounting section covers 23 active ledgers. All of these ledgers are posted by means of a Burroughs posting machine. The general ledger and accounts receivable ledgers are posted daily. The inventory ledgers are posted weekly, and the equipment ledgers, expenditures ledgers, and budget ledger are posted monthly. The automotive section of the property ledger is posted quarterly, and the other property groups are posted annually.

Unlike most municipal accounting systems, the accounting system of the Highway Department is unique with respect to the fact that a general ledger is kept. The general ledger is divided in two parts, the current fund, and the fixed assets and bonded debt. The current fund section is posted daily and includes all current assets and current liabilities, and the current surplus. At the end of every month, a balance sheet is compiled and included with other statements in the monthly report to the Highway Commissioners. The section of the general ledger having to do with fixed assets and bonded debt is posted annually, with the exception of the automotive equipment asset accounts, which are posted every quarter. The current fund balance sheet as of June 30, 1950, is shown in Table XX.

The detailed cost accounts which are kept by the cost accounts section, are controlled by the expenditure control accounts in the general ledger. The control is divided into five major classification groups of accounts, viz:

1. Capital outlays.
2. Maintenance.
3. Operation.
4. Service and clearing.
5. Debt service.

By means of "control" accounting, one entry to one of the five expenditure control accounts may cover a series of entries in the respective section of the cost accounts record (explained hereinafter).

The cost accounts section is responsible for (a) keeping detailed cost accounts, (b) preparing pay rolls and pay checks, (c) preparing monthly and annual records from data required in (a) and (b) . The cost accounting system for highways provides a means of compiling costs of maintaining a section of highway, shows the type of work done (function account) and the nature of the expenditure (object account). Examples of types of work are: Roadway surface, shoulders, drainage, structures, traffic service. Examples of nature of expenditure are: Salaries and wages, insurance, traveling expenses, stationery, telephone and telegraph, materials and supplies.

TABLE XX

CURRENT FUND BALANCE SHEET
As of June 30, 1950

ASSETS

Cash on deposit and on hand:		
Highway fund	$ 6,240,939.07	
Revolving fund	515,867.53	
U. S. National Bank—Astoria branch	3,953.00	
Change fund and petty cash	425.00	
Advance deposits account—contra	109,779.63	
Bid deposits—contra	2,000.00	
Deposit with fiscal agency—contra	262,628.82	$ 7,135,593.05
Unreimbursed revolving fund expenditures		184,132.47
Receivables:		
Accounts receivable—miscellaneous	$ 45,437.86	
Loans receivable—counties and cities	986,648.22	
Reimbursements receivable:		
Federal aid	848,945.00	
Cities and counties	346,869.05	
Total	$ 2,227,900.13	
Less reserve for losses	131,684.47	
	$ 2,096,215.66	
Revenues receivable	65,075.36	2,161,291.02
Inventories, unallocated field costs, etc.:		
Inventories	$ 4,976,815.12	
Unallocated field costs, gas, oil and grease	81,033.31	
Postage on hand	802.27	5,058,650.70
Deferred expenditures:		
Unamortized bond discount and premium—net		14,490.43
Cost to complete construction and rock production in progress—contra		14,727,458.07
		$29,281,615.74

LIABILITIES, RESERVES AND SUPPLIES

Liabilities:		
Vouchers payable	$ 733,606.19	
Contracts payable—retained amounts	1,043,626.30	
Employees' withholding tax and other deductions	73,910.48	
Matured bonds and interest coupons—contra	262,628.82	
Deposits on bids—contra	2,000.00	
Deposits on work to be performed—contra	109,779.63	
Contractors' claims payable	44,596.63	$ 2,270,148.05
Deferred revenues		1,178,760.50
Cost to complete construction and rock production in progress—contra		14,727,458.07
Reserves and surplus:		
Reserve for revolving fund	$ 700,000.00	
Reserve for investment in inventories, etc.	5,058,650.70	
Reserve for loans—counties and cities	986,648.22	
Reserve for amortization of bond discount and premium—net	14,490.43	
Current surplus	4,345,459.77	11,105,249.12
		$29,281,615.74

RECONCILIATION OF CURRENT SURPLUS

Current surplus as above	$ 4,345,459.77
Contracts payable—retained amounts	1,043,626.30
Liabilities accrued as of December 31, 1949, unrecorded	44,599.52
Unexpended balance, June 30, 1950, per statement of Receipts and Expenditures	$ 5,433,685.59

The work of the cost accounts section is carried on by means of punched card equipment. One year's business requires about 1,050,000 cards, comprising nine different types of cards. The equipment required to handle this work consists of one alphabetic and two numeric key punch machines, three mechanical verifiers, two electric card sorters, one electric collator, one electric printing-interpreter, one electric multiplier, two electric tabulators, and two electric summary punch reproducers. The sorters operate at the rate of 450 cards per minute, while the tabulators will permit a listing of cards at the rate of 100 cards per minute, or a tabulation of cards by programmed control at the rate of 150 cards per minute. Each tabulator is equipped with an automatic carriage and automatic carriage control. Most of the work performed by the tabulators is printed on continuous forms. Thus by combining automatic carriage control with continuous forms, a tabulator will operate a hopper full of cards completely by itself, spacing from line to line and from sheet to sheet without constant watch by the operator.

Machine processing of pay rolls and pay checks was inaugurated on May 1, 1947, after a lengthy survey of the various methods available. Under the procedure established, a monthly time report is submitted by a supervisory employee in charge of a crew of workmen. The monthly time reports are compiled by hand, and show the name and number of the employee, the hours and days worked, the rate of pay, and the gross amount earned. After these data have been audited and verified by the pay rolls section, the key punch operators in the cost accounts section punch cards from the data on the time reports. By means of master name and pledged deduction cards, together with the gross pay card, and the computed deduction card processed through the electric multiplier, a set of three cards is developed for each employee on each time report. When these sets of cards are fed into the electric tabulator the pay rolls are compiled showing the gross amount of pay, the amount of each pay roll deduction and the net amount of the pay check. After the pay rolls have been prepared, the same sets of cards are used to print the pay checks.

Inventory Controls

Perpetual inventory systems are maintained on rock in stockpiles, automotive repair parts and accessories and other supplies in storerooms, repair shop jobs in progress, gasoline, oil and grease, and postage stamps and metered postage at the Salem office. New controls were established January 1, 1950, for road signs and sign materials, and for sign shop jobs in progress.

The perpetual inventory control of stock in storerooms includes four warehouses, the combined inventories of which at December 31, 1949, were $914,370.94. The inventory control of repair shop jobs in progress includes four repair shops, the combined inventories of which at December 31, 1949, were $71,072.91. An accompanying summary shows the volume of transactions involved in the principal inventory controls during the calendar year 1949.

The control of gasoline and control of oil and grease involve the reports obtained from 155 permanent pump locations, and 15 portable pumps in use during the summer season. Each pump attendant is required to report semi-monthly, the physical quantity of gasoline in the tank. The quantity is ascertained by the use of a gauge stick. Each pump is provided with a series of gas tickets, one of which is issued with each service by the pump in much the same manner as one obtains a service station ticket for his private automobile. Gasoline is sold at cost price delivered at the pump, plus one cent per gallon. This pumping charge is credited to an account separate from sales, and against this one cent per gallon is charged the cost of pump repairs throughout the year, and the shrinkage in gasoline due to temperature changes or mechanical inaccuracies in the operation of the pumps. A tolerance of two per cent of quantities sold, is permitted each pump, but all overages and shrinkages in excess of the two per cent tolerance must be checked, and reported. If the report indicates pump trouble, the pump repair crew makes an inspection and test of the mechanical accuracy of the pump, and accomplishes necessary repairs.

Summary of Inventory Changes
Calendar Year 1949

	Rock in Stockpiles	Storerooms	Repair Shop Jobs in Progress	Gasoline
Inventory, 1-1-49	$2,833,655.21	$ 763,033.68	$ 72,283.18	$ 17,910.29
Purchases	2,103,044.95	1,099,175.90		612,976.71
Labor and materials processed			957,008.49	
Sales at cost	(1,747,914.35)	(947,838.64)		(607,988.69)
Shrinkage				(3,091.96)
Cost of jobs completed			(958,218.76)	
Inventory 12-31-49	$3,188,785.81	$ 914,370.94	$ 71,072.91	$ 19,806.35
Inventories in prior years:				
12-31-48	$2,833,655.21	$ 763,033.68	$ 72,283.18	$ 17,462.96
12-31-46	2,593,360.39*	497,557.89	35,264.97	10,395.29
12-31-44		437,373.97	20,887.85	10,602.86
12-31-42		438,300.69	16,016.02	10,891.72
12-31-40		363,277.74	27,964.84	2,701.14

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* Inventory control started in 1945.

The inventory control of rock in stockpiles covers the stockpiles one sees along the highway rights of way throughout the state. The rock inventory is charged with the cost of rock crushed and stockpiled under contract, and also with rock and gravel purchased from vendor companies. Each crew foreman is provided with a form of "Rock Use Ticket," and he is required to issue a ticket for each quantity of rock removed from a stockpile, or purchased from a vendor company. The tickets are priced by his district office, at a prescribed district average price. At the close of business for November of each year, each district maintenance superintendent prepares a listing of the quantity of rock on hand in each stockpile in his district. The quantity of rock in a stockpile is determined usually by the cross-section method. The total quantity inventory for a district is reported to the Accounting Division where the inventory is compared with the balance of the district rock inventory ledger. This ledger is a record of the inventory changes and balance, both as to quantity and value. If the difference between the physical inventory of quantity reported by a district and the quantity shown by the rock ledger is more than five per cent of rock used, an immediate investigation is made in an effort to account for the discrepancy.

The inventory of rock is the largest inventory unit under inventory control. This inventory runs between two and four million dollars covering 1,349 stockpile sites throughout the state. The inventory values for five years commencing December 1, 1945, are shown below:

Inventory of Rock in Stockpiles

As of December 1	Cu. Yds.	Amount
1949	1,255,168	$3,188,785.81
1948	1,160,505	2,833,655.21
1947	1,126,206	2,843,952.99
1946	1,182,013	2,593,360.39
1945	1,193,368	2,500,445.34

Service on Pay Checks

The process of preparing pay rolls and pay checks by punched card equipment has been touched upon previously in this report. At the time the survey was completed on the feasibility of machine-made rolls and checks, it was estimated that pay checks for the hour-rate employees in the field locations could be released from the Accounting Division on the third working day after the date of receipt of the time report.

Occasional complaints have been made by employees to the effect that their pay checks were received quite late. Considering the fact that every pay roll must be certified by the Civil Service Commission before the pay checks may be released, the actual release of pay checks to hourly-rate employees has been on a very consistent and prompt schedule, as shown by the tabulation following:

Year	Pay roll Month	No. of Time Reports	Ave. Time Required to Release Checks*
1948	July	214	3.5
	August	220	4.3
	September	223	4.7
	October	226	5.2
	November	219	4.1
	December	206	4.1
1949	January	202	3.6
	February	216	3.3
	March	212	4.0
	April	213	3.8
	May	217	3.9
	June	215	2.9
	July	229	3.2
	August	213	3.4
	September	223	3.7
	October	227	3.3
	November	210	3.1
	December	210	3.4
1950	January	217	3.0
	February	200	2.9
	March	196	2.9
	April	203	3.5
	May	197	3.3
	June	208	3.3
	2-Year Average	213	3.6

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* Includes delays caused by certification of pay rolls.

Withholding Tax Service

The advent of the withholding tax procedure by the federal and state governments has placed a tremendous burden upon large state department employers. Every employee must have on file a withholding tax exemption certificate which shows the number of personal exemptions claimed by the employee. Regardess of the system of pay roll accounting used by a department, these data must be recorded in a master file or master record of some sort, whether it be an employees' earnings record, a master tax card file, or pay roll master card file. In the Highway Department, the data are transferred from the W-4, to the pay roll master name card file (punched cards), and to the employee's service record card. At the end of the pay roll processing period in each month, the account of monthly earnings, together with the monthly tax deduction, is transferred to an accumulated tax and earnings card by a process which punches the accumulated tax and accumulated earnings in a new card, one card for each employee for the period. This process of developing accumulated total cards is repeated throughout the year, ending with the pay roll period of November 30. This date has been confusing to many employees who have computed their total earnings and total taxes, from the statements of earnings detached from their pay checks, on the calendar year earnings basis. Since taxes are withheld on wages *paid,* the wages earned during the month of November and paid in December, are the last month's wages in a tax year.

In October of each year, preparatory to mailing W-2 forms, a list of all the employees in the Department is compiled according to crews, and each supervisory employee in charge of a crew receives a list of his employees and their addresses. The purpose of this listing is to obtain correct address cards to be used in processing the W-2 forms.

Caretaker's cottage in Armitage State Park near Coburg, Lane County.

The W-2 forms are processed about December 15 of each year, and are continuous five-part forms so compiled that the employee receives three copies, the Collector of Internal Revenue one copy, and the State Tax Commission one copy. During December 1949, six thousand W-2's were mailed to employees and persons who had been employees within the year. The total earnings of the employees aggregated $8,941,066.52 while the taxes withheld and remitted to the Collector of Internal Revenue amounted to $591,340.39.

Retirement Contributions Service

The Public Employees Retirement System was established in July, 1946. This was another burden placed upon the accounting divisions of the various state departments and commissions. Under this system, the accounting division must provide the following:

1. Notice of new membership.
2. Notice of re-employment of members.
3. Notice of termination, with amounts of accumulated earnings and contributions.
4. Annual report of all employes in active service as of June 30.

The retirement act added one more punched card per employee to the accounting system, one more monthly record, and one more annual report. It also added a pay roll step, wherein the amount of earnings of an employee is multiplied (by punched card equipment) by the rate of contributions applicable to said employee. The punched cards are processed every month after the pay roll period, and the data contained in the new cards each month are the accumulated earnings, and accumulated contributions of each of the employees. These cards are used to compile the monthly record of earnings and retirement contributions of each employee. The total of this record is used in verifying the monthly remittance to the retirement system.

Just prior to the end of each fiscal year a preliminary listing of all employees by number, name, and rate of contribution, is submitted to the retirement system for comparison with its records.

After the close of the fiscal year, the annual report is prepared by an electric tabulator. The report is required to show the employee number, the name of the employee, the rate of contribution, the amount of accumulated salary subject to contribution, the amount of accumulated contributions, the amount of accumulated salary not subject to contributions, and the total accumulated salary.

The retirement act in its original form required each employee to choose to contribute on all of his salary each month, or $200.00 per month, and to choose whether to contribute at the rate prescribed by law for his attained age, or at the rate of five per cent in the event the statutory rate was greater..

The foregoing system was readily adapted to punched card procedure in the Highway Department, and the pay roll program was amended to incorporate the retirement contribution deductions plan.

Pavement Widening in East Beaverton, Washington County

In 1949, the legislature amended the contributions provisions to the extent that an employee now contributes on all of his salary up to a total of $3,000 of salary for one fiscal year. This amendment placed an additional burden on the punched card system of pay roll procedure, because it forces the employer to determine in advance the month in which an employee's accumulated salary will equal or exceed $3,000. When that month is reached, the contributions must be computed on the amount of salary (for the month) which represents the difference between the $3,000 limit and the accumulated salary at the end of the previous month. Such a procedure requires considerable handling of the cards manually, and slows down the pay roll procedure beginning with the fourth month of each fiscal year.

The annual report of retirement contributions for the employees of the Highway Department, as of June 30, 1950, required 93 pages of double spaced machine tabulations. The report included 2,523 employees, in addition to which there were 612 employees who had terminted their services during the fiscal year. The total contributions paid by the 3,135 employees amounted to $446,913.35 on salaries of $7,310,656.10, which was the net amount subject to contributions. During the same fiscal period, the Highway Department's share of contributions was $312,839.36 in matching funds, and $178,765.33 for prior service credits. The total employer's contributions of $491,604.69 was in accordance with statutory requirements. Contributions for the fiscal year ended June 30, 1949, consisted of employees' contributions of $369,853.13, and employer's contributions which aggregated $382,736.67.

Budgetary Controls

The fiscal accounts of the State of Oregon are closed on the fiscal year basis, the fiscal period ending June 30, of every odd year. Immediately after June 30 of an even year, each department, commission, or board within the state government must start to prepare a biennial budget showing estimated revenues and expenditures for the new biennium commencing the following July 1. This budget must contain a schedule of salaries of all employees grouped according to civil service classification. The budget is referred to the State Budget Director, then to the Governor, and if approved by him the budget is submitted to the Ways and Means Committee of the legislature. If the budget is approved by the legislature, the amounts contained in the budget summary are certified by the Budget Director to the Secretary of State. For purposes of control, the biennial budget is divided into four major budgetary groups:

1. Salaries and wages.
2. General, operating, and maintenance.
3. Capital outlays.
4. Special requests.

For purposes of budgetary allotment, the biennial budget is divided into quarters. At the beginning of each quarter of the biennium, a request is made of the budget director, on a specially printed form, to approve the budgetary allotments estimated to be required for each of the four major account groups, for the ensuing quarters.

As the claims are processed through the cost accounts section, a budgetary classification is run on a continuous gummed form, one form for each voucher. The gummed forms are later attached to the vouchers, and serve as a basis for the posting of the budget ledger accounts by the Secretary of State. During the month, the Accounting Division of the Highway Department posts from a voucher summary to the budget ledger. At the end of every month, a report is made to the Budget Division showing the amount expended for the month, the amount expended to date within the biennium, the amounts allotted by group accounts, and the unexpended balance in each of the group accounts. At the end of a quarter any unexpended balance in one of the four major groups is deducted from the respective estimated allotment required for the ensuing quarter, to determine the additional allotment to be authorized.

The budgetary control, as outlined above, requires a considerable amount of time to be expended in reconciling figures with the Secretary of State. His budget records are on a strictly cash basis, whereas the expenditures records of the Highway Department are on a vouchers payable basis. Thus the reconciliation involves the determination of the amount of expenditures in transit, that is, items recorded on the Highway Department budget ledger which haven't yet reached the office of the Secretary of State.

There are also items of cash refunds, and reimbursements that are credited back to expenditures on the records of the Highway Department, whereas the Secretary of State records such items in a separate cash account. Each month it is encumbent upon the Accounting Division of the Highway Department to advise the Secretary of State the account break-down for the cash "offset items" of the month.

John Day Highway Forest Road project east of Prairie City, Grant County.

Section Three

FINANCIAL STATEMENTS

Covering the Fiscal Period

July 1, 1948, to June 30, 1950

AND

STATISTICAL INFORMATION

PERTAINING TO

State Highways and County Roads

IN THE

STATE OF OREGON

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Table No. 1

DETAILED SUMMARY OF INCOME AND EXPENDITURES

July 1, 1948 to June 30, 1950

INCOME

Classification	Receipts July 1, 1948 to June 30 1949	Receipts July 1, 1949 to June 30, 1950	Total Receipts July 1, 1948 June 30, 1950
State Funds:			
Motor vehicle license fees	$ 2,929,695.68	$ 6,386,029.77	$ 9,315,725.45
Gasoline tax	20,246,147.85	24,677,242.94	44,923.390.79
Diesel fuel tax	597.01	....	597.01
Motor transportation fees	5,112,680.05	4,859.727.32	9,972,407.37
Fines for traffic violation	254,792.76	246,345.87	501,138.63
Contributions to cities withheld	250,000.00	250,000.00	500,000.00
Receipts from rentals, discounts, etc.	47,766.25	32,699.26	80,465.51
Receipts from counties to apply on loans	....	140,949.75	140,949.75
Refund of unexpended balance of state police contributions	....	241,155.49	241,155.49
Subtotals, state funds	$28,841,679.60	$36,834,150.40	$65,675,830.00
Less Contributions			
To state police	$ 1,051,160.51	$ 1,018,332.49	$ 2,069,493.00
To counties	5,413,505.28	6,520.551,05	11,934,056.33
To cities	2,778,090.12	3,063,322.13	5,841,412.25
Advance loans to counties	800,945.00	326,652.97	1,127,597.97
Subtotals, contributions	$10,043,700.91	$10,928,858.64	$20,972,559.55
Total net income, state funds	$18,797,978.69	$25,905,291.76	$44,703,270.45
Cooperative Funds:			
City cooperative funds	$	$ 103,753.11	$ 103,753.11
County cooperative funds	34,655.30	355,059.91	389.715.21
Federal cooperative funds	6,081,481.69	7,009,149.16	13,090,630.85
Miscellaneous cooperative funds	40,822.13	115,351.16	156,173.29
Subtotal, cooperative funds	$ 6,156,959.12	$ 7,583,313.34	$13,740,272.46
Grand total, net income	$24,954,937.81	$33,488,605.10	$58,443,542.91
Balance on hand, July 1, 1948	16,262,492.17	....	16,262,492.17
Total funds available	$41,217,429.98	$33,488,605.10	$74,706,035.08

Table No. 1—Continued

EXPENDITURES

Classification	Expended July 1, 1948 to June 30, 1949	Expended July 1, 1949 to June 30, 1950	Total Expended July 1, 1948 to June 30, 1950
Capital Outlays:			
Construction, primary highways	$11,513,833.92	$10,283,932.69	$21,797,766.61
Construction, secondary highways	2,291,409.88	1,538,821.70	3,830,231.58
Construction, county roads	1,529,708.97	1,935,545.79	3,465,254.76
Cooperation in forest road work	183,000.00	948,000.00	1,131,000.00
Expenditure of city allotment	233,052.58	285,796.60	518,849.18
Minor betterments	676,596.57	872,382.63	1,548,979.20
Surveys	556,447.93	726,404.30	1,282,852.23
Real property negotiation expense	100,767.38	100,001.80	200,769.18
Purchase of right of way, quarries, etc.	1,992,894.93	1,776,798.90	3,769,693.83
Purchase of parks	48,496.81	91,709.47	140,206.28
Improvements in parks	118,120.53	187,600.84	305,721.37
Improvements at maintenance stations	194,636.56	233,345.82	427,982.38
Improvements of other properties	73,266.68	457,239.41	530,506.09
Equipment purchases less credits for sales and depreciation	831,994.14	432,591.04	1,264,585.18
Subtotals, capital outlays	$20,344,226.88	$19,870,170.99	$40,214,397.87
Maintenance:			
Special maintenance	$ 967,665.37	$ 853,620.67	$ 1,821,286.04
General maintenance, primary	7,260,827.48	7,349,029.95	14,609,857.43
General maintenance, secondary	2,375,344.92	2,352,907.29	4,728,252.21
Maintenance of county roads, signs, etc.	17,481.99	24,420.57	41,902.56
Maintenance station upkeep	92,212.24	82,140.42	174,352.66
Radio communication system	24,301.79	25,669.14	49,970.93
Truck load inspection	178,469.32	178,349.32	356,818.64
District maintenance superintendence	220,931.81	257,282.79	478,214.60
Maintenance of city streets	....	1,132.61	1,132.61
Subtotal maintenance	$11,137,234.92	$11,124,552.76	$22,261,787.68
Operation:			
Administration and general supervision	$ 1,007,107.89	$ 1,200,855.30	$ 2,207,963.19
Planning and traffic surveys	241,162.23	269,214.92	510,377.15
Travel information bureau	259,459.35	255,203.40	514,662.75
Operation of parks	194,738.34	259,239.50	453,977.84
Leases, quarries, stockpile sites, etc.	6,714.39	Cr. 3,268.47	3,445.92
Operation of drawbridges and ferries	183,755.69	194,320.17	378,075.86
Research and special investigation	12,448.32	9,338.63	21,786.95
Contribution to retirement fund	390,158.48	496,570.77	886,729.25
Legislative interim committee expense	62,877.86	11,483.26	74,361.12
Miscellaneous general expense	74,406.32	78,779.48	153,185.80
Subtotal, operation	$ 2,432,828.87	$ 2,771,736.96	$ 5,204,565.83
Service and clearing accounts	Cr. 161,648.27	728,473.34	566,825.07
Bond interest and maturities	545,247.67	479,525.37	1,024,773.04
Total expenditures	$34,297,890.07	$34,974,459.42	$69,272,349.49

Table No. 2

SUMMARY OF EXPENDITURES JULY 1, 1948 TO JUNE 30, 1949

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures State	County	Federal Government	Misc. Contributors
Construction, primary highways	$11,513,833.92	$ 7,592,547.13	$	$3,896,154.89	$25,131.90
Construction, secondary highways	2,291,409.88	872,962.61		1,412,260.80	6,186.47
Construction, county roads	1,529,708.97	911,608.67	34,655.30	583,445.00	
Cooperation in forest road work	183,000.00	183,000.00			
Expenditure of city allotment	233,052.58	223,548.79			9,503.79
Minor betterments	676,596.57	676,596.57			
Surveys and engineering county work	556,447.93	506,078.93		50,369.00	
Real property negotiation expense	100,767.38	100,767.38			
Purchase of rights of way, quarries, etc.	1,992,894.93	1,992,894.93			
Purchase of parks	48,496.81	48,496.81			
Improvements in parks	118,120.53	118,120.53			
Improvements at maintenance stations	194,636.56	194,636.56			
Improvements of other properties	73,266.68	73,266.68			
Equipment purchases less credit for sales and depreciation	831,994.14	831,994.14			
Subtotals, capital outlays	$20,344,226.88	$14,326,519.73	$34,655.30	$5,942,229.69	$40,822.16
Special maintenance	$ 967,665.37	$ 967,665.37	$	$	$
General maintenance, primary	7,260,827.48	7,260,827.48			
General maintenance, secondary	2,375,344.92	2,375,344.92			
Maintenance of county roads, signs, etc.	17,481.99	17,481.99			
Maintenance station upkeep	92,212.24	92,212.24			
Radio communication system	24,301.79	24,301.79			
Truck load inspection	178,469.32	178,469.32			
District maintenance superintendence	220,931.81	220,931.81			
Subtotals, maintenance	$11,137,234.92	$11,137,234.92	$	$	$
Administration and general supervision	$ 1,007,107.89	$ 1,007,107.89	$	$	$
Planning and traffic surveys	241,162.23	134,910.23		106,252.00	
Travel information bureau	259,459.35	259,459.35			
Operation of parks	194,738.34	194,738.34			
Leases quarries, stockpile sites, etc.	6,714.39	6,714.39			
Operation of drawbridges and ferries	183,755.69	183,755.69			
Research and special investigation	12,448.32	12,448.32			
Contribution to retirement fund	390,158.48	390,158.48			
Legislative interim committee expense	62,877.86	62,877.86			
Miscellaneous general expense	74,406.32	74,406.32			
Subtotals, operation	$ 2,432,828.87	$ 2,326,576.87	$	$ 106,252.00	$
Service and clearing accounts	Cr. 161,648.27	Cr. 161,648.27			
Bond interest and maturities	545,247.67	545,247.67			
Totals	$34,297,890.07	$28,173,930.92	$34,655.30	$6,048,481.69	$40,822.16

Table No. 2—Continued

SUMMARY OF EXPENDITURES JULY 1, 1949 TO JUNE 30, 1950

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures			
		State	County	Federal Government	Misc. Contributors
Construction, primary highways	$10,283,932.69	$ 4,891,454.15	$	$5,304,493.31	$ 87,985.23
Construction, secondary highways	1,538,821.70	617,906.79	30,195.50	884,003.41	6,716.00
Construction, county roads	1,935,545.79	915,892.29	324,864.41	694,789.09	
Cooperation in forest road work	948,000.00	948,000.00			
Expenditure of city allotment	285,796.60	182,043.49			103,753.11
Minor betterments	872,382.63	865,200.28			7,182.35
Surveys and engineering county work	726,404.30	672,514.95		53,889.35	
Real property negotiation expense	100,001.80	100,001.80			
Purchase of rights of way, quarries, etc.	1,776,798.90	1,776,798.90			
Purchase of parks	91,709.47	91,709.47			
Improvements in parks	187,600.84	187,600.84			
Improvements at maintenance stations	233,345.82	233,345.82			
Improvements of other properties	457,239.41	457,239.41			
Equipment purchases less credit for sales and depreciation	432,591.04	432,591.04			
Subtotals, capital outlays	$19,870,170.99	$12,372,299.23	$355,059.91	$6,937,175.16	$205,636.69
Special maintenance	$ 853,620.67	$ 840,153.12	$	$	$ 13,467.55
General maintenance, primary	7,349,029.95	7,349,029.95			
General maintenance, secondary	2,352,907.29	2,352,907.29			
Maintenance of county roads, signs, etc.	25,553.18	25,553.18			
Maintenance station upkeep	82,140.42	82,140.42			
Radio communication system	25,669.14	25,669.14			
Truck load inspection	178,349.32	178,349.32			
District maintenance superintendence	257,282.79	257,282.79			
Subtotals, maintenance	$11,124,552.76	$11,111,085.21	$	$	$ 13,467.55
Administration and general supervision	$ 1,200,855.30	$ 1,200,855.30	$	$	$
Planning and traffic surveys	269,214.92	164,240.92		104,974.00	
Travel information bureau	255,203.40	255,203.40			
Operation of parks	259,239.50	259,239.50			
Leases quarries, stockpile sites, etc.	Cr. 3,268.47	Cr. 3,268.47			
Operation of drawbridges and ferries	194,320.17	194,320.17			
Research and special investigation	9,338.63	9,338.63			
Contribution to retirement fund	496,570.77	496,570.77			
Legislative interim committee expense	11,483.26	11,483.26			
Miscellaneous general expense	78,779.48	78,779.48			
Subtotals, operation	$ 2,771,736.96	$ 2,666,762.96	$	$ 104,974.00	$
Service and clearing accounts	728,473.34	728,473.34			
Bond interest and maturities	479,525.37	479,525.37			
Totals	$34,974,459.42	$27,358,146.11	$355,059.91	$7,042,149.16	$219,104.24

Table No. 3

MILEAGES OF HIGHWAY CONSTRUCTION WORK PERFORMED by the STATE HIGHWAY COMMISSION

New Construction and Reconstruction

Highway System and Year	Concrete Pavement (Miles)	Bituminous Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Rock and Gravel Surfacing (Miles)	Grading (Miles)	Bridges over 20 feet (No.)	Grade Separations (No.)
Primary:								
1917-1946	348.9	728.6	1,106.1	3,057.3	4,540.0	4,101.2	1,089	62
1947	16.4	16.1	8.8	58.5	83.9	108.4	20	6
1948	1.1	37.5	28.2	73.4	139.9	69.8	30	7
1949	4.6	11.4	58.9	77.5	127.6	57.2	20	4
1950	....	57.1	7.7	39.4	76.5	68.9	21	6
Totals	371.0	850.7	1,209.7	3,306.1	4,967.9	4,405.5	1,180	85
Secondary:								
1933-1946	8.7	13.9	37.4	759.0	687.9	451.7	107	11
1947	....	0.1	3.5	155.8	142.2	80.1	2	1
1948	....	22.8	2.9	74.2	105.1	81.3	7	1
1949	....	5.7	0.5	73.9	75.7	51.8	1	......
1950	....	9.7	15.1	43.8	65.1	38.8	1	1
Totals	8.7	52.2	59.4	1,106.7	1,076.0	703.7	118	14
Other Roads:								
1935-1946	7.2	29.7	33.1	248.6	239.9	187.7	20	7
1947	....	7.8	......	5.7	12.9	7.2	......	......
1948	....	6.6	5.0	30.1	40.3	12.2	5	......
1949	0.1	6.3	1.0	15.1	18.8	14.3	6	......
1950	....	2.3	0.3	50.8	52.4	26.7	3	......
Totals	7.3	52.7	39.4	350.3	364.3	248.1	34	7

Table No. 4

MILEAGES OF STATE HIGHWAYS MAINTAINED BY THE STATE HIGHWAY COMMISSION

Highway System and Year	Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Rock Surfacing	Unoiled Rock Surfacing	Graded and Unimproved Earth	Total
Primary:							
1946	333	540	1,230	2,310	268	114	4,795
1947	343	558	1,222	2,376	218	90	4,807
1948	344	547	1,248	2,405	190	83	4,817
1949	345	561	1,272	2,411	177	56	4,822
Secondary:							
1946	46	141	51	1,102	749	285	2,374
1947	50	172	66	1,235	615	258	2,396
1948	50	172	40	1,377	583	216	2,438
1949	50	180	45	1,424	573	178	2,450

Table No. 5

STATE FUNDS RECEIVED AND EXPENDED BY THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1950

Year	Net Receipts (State Funds Only)	Net Expenditures (State Funds Only)
1917 (including $94,418.14 balance from 1916)	$ 1,802,190.22	$ 674,249.61
1918	1,759,600.15	2,214,007.87
1919	7,458,614.05	6,278,304.16
1920	11,320,354.05	11,381,606.97
1921	13,550,136.40	15,045.824.65
1922	9,608,966.45	7,724,688.96
1923	7,664,977.79	7,287,991.77
1924	6,115,536.48	6,916,867.91
1925	10,231,908.30	10,611,283.45
1926	7,345,080.19	7,927,130.75
1927	8,627,279.00	8,474,609.91
1928	8,721,396.09	8,975,204.79
1929	10,658,473.58	10,160,542.57
1930	13,897,663.65	12,808,014.45
1931	10,930,545.38	11,108,835.57
1932	9,925,665.72	10,812,369.81
1933	7,804,925.99	7,860,497.50
1934	8,798,396.81	7,517,063.41
1935	14,469,922.86	13,687,022.82
1936	10,943,742.46	13,194,698.50
1937	11,921,069.07	12,595,127.42
1938	11,418,916.44	11,261,453.70
1939	11,771,364.62	11,158,189.25
1940	12,759,332.27	12,156,575.57
1941	15,093,637.57	14,874,800.01
1942	13,450,738.45	13,290,781.61
1943	11,738,155.10	9,128,388.61
1944	11,714,984.39	8,499,431.13
1945	13,224,169.64	7,635,689.97
1946	18,681,153.29	15,336,831.64
1947	19,783,754.69	19,282,928.54
1948	20,170,681.21	25,057,168.91
1949	19,231,769.16	27,317,223.60
1950 (to June 30)	13,407,281.46	12,313,292.00
Totals	$386,002,382.98	$380,568,697.39
Balance on hand, July 1, 1950		5,433,685.59
Totals		$386,002,382.98

Table No. 6—YEARLY EXPENDITURES ON WORK HANDLED UNDER THE SUPERVISION OF THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1950

Year	State Funds	County Funds	Government Funds	Miscellaneous Contributors' Funds	Totals
1917	$ 674,249.61	$ 270,162.37	$	$	$ 944,411.98
1918	2,214,007.87	439,562.42			2,653,570.29
1919	6,278,304.16	368,550.01	224,851.60		6,871,705.77
1920	11,381,606.97	866,836.96	1,096,027.33	19,364.26	13,363,835.51
1921	15,045,824.65	984,296.42	2,181,956.65	47,913.16	18,259,990.88
1922	7,724,688.96	3,727,388.65	1,043,695.07	120,354.97	12,616,127.65
1923	7,287,991.77	2,180,266.25	1,719,088.71	149,075.88	11,336,422.61
1924	6,916,867.91	1,544,267.37	1,118,777.53	136,150.73	9,716,063.54
1925	10,611,283.45	1,297,105.54	1,327,328.92	92,638.46	13,328,356.37
1926	7,927,130.75	704,856.67	1,264,688.74	89,761.29	9,986,437.45
1927	8,474,609.91	611,924.22	1,111,521.64	65,387.07	10,263,442.85
1928	8,975,204.79	683,283.51	582,440.20	27,315.83	10,268,244.33
1929	10,160,542.57	532,907.15	624,415.28	9,969.29	11,327,834.29
1930	12,808,014.45	280,079.24	1,565,288.34	14,554.57	14,667,936.60
1931	11,108,835.57	236,863.93	4,535,069.46	19,947.46	15,900,716.42
1932	10,812,369.81	165,238.34	1,703,369.15	63,513.25	12,744,490.55
1933	7,860,497.50	168,028.79	2,723,724.39	26,912.05	10,779,162.73
1934	7,517,063.41	174,720.24	6,023,993.01	3,522.50	13,719,299.16
1935	13,687,022.82	133,562.57	4,165,503.33	10,000.00	17,996,088.72
1936	13,194,698.50	129,233.41	6,375,343.26	8,773.61	19,708,048.78
1937	12,595,127.42	80,174.48	4,589,894.89	62,146.90	17,327,343.69
1938	11,261,453.70	186,284.48	2,873,801.64	25,000.00	14,346,539.82
1939	11,158,189.25	9,480.34	2,652,475.77	12,202.46	13,832,347.82
1940	12,156,575.57	4,000.00	2,926,250.31	30,976.06	15,117,801.94
1941	14,874,800.01	62,041.05	2,810,894.93	7,250.00	17,754,985.99
1942	13,290,781.61	8,492.08	2,273,616.82	13,926.38	15,586,816.89
1943	9,128,388.61	1,550.00	4,341,584.26	32,500.00	13,504,022.87
1944	8,499,431.13	8,550.00	3,108,858.22	30,112.71	11,646,952.06
1945	7,635,689.97	1,550.00	2,290,000.27	861.01	9,928,101.25
1946	15,336,831.64	1,550.00	2,339,091.54	385.08	17,677,858.26
1947	19,282,928.54	16,200.00	6,771,812.00	22,421.33	26,093,361.87
1948	25,057,168.91	19,722.70	6,180,173.46	31,318.34	31,288,383.41
1949	27,317,223.60	269,590.62	6,555,119.04	71,522.66	34,213,455.92
1950 (to June 30)	12,313,292.00	100,401.89	2,167,052.35	157,085.40	14,737,831.64
Totals	$380,568,697.39	$ 16,268,721.70	$ 91,267,708.11	$ 1,402,862.71	$489,507,989.91

Table No. 7

SUMMARY OF EXPENDITURES BY MAJOR ITEMS

From 1917 to June 30, 1950

Classification of Expenditures	Total Amount Expended	(Cooperation in Expenditures) State	County	Government	Miscellaneous Contributors
Capital Outlays:					
Contract construction	$225,422,504.80	$118,611,399.25	$ 15,638,352.90	$ 89,792,434.40	$ 1,380,318.25
Cooperation in forest road work	7,524,679.46	7,030,329.09	494,350.37		
Minor betterments	9,945,349.40	9,928,894.31	5,272.74	4,000.00	7,182.35
Surveys	7,099,628.47	6,924,100.46	15,672.21	159,855.80	
Subtotals, construction	$249,992,162.13	$142,494,723.11	$ 16,153,648.22	$ 89,956,290.20	$ 1,387,500.60
Rights of way, quarries, etc.	13,305,276.73	13,084,114.19	9,909.75	211,252.79	
Parks	1,690,986.45	1,676,007.45		14,979.00	
Buildings and improvements (except parks)	2,297,443.04	2,264,983.44		32,459.60	
Equipment (subsequent to 1934 only)	3,018,602.40	3,018,602.40			
Subtotals, capital outlays (including construction)	$270,304,470.75	$162,538,430.59	$ 16,163,557.97	$ 90,214,981.59	$ 1,387,500.60
Maintenance:					
Special maintenance	$ 11,969,356.28	$ 11,777,212.42	$ 2,516.17	$ 176,047.45	$ 13,580.24
General maintenance	92,653,408.19	92,516,305.69	83,320.64	51,999.99	1,781.87
Other maintenance items	6,090,194.49	6,056,656.93	2,527.41	31,010.15	
Subtotals, maintenance	$110,712,958.96	$110,350,175.04	$ 88,364.22	$ 259,057.59	$ 15,362.11
Miscellaneous:					
Administration	$ 11,984,711.68	$ 11,984,711.68	$	$	$
Miscellaneous operations	13,095,749.67	12,285,281.23	16,799.51	793,668.93	
Bond interest and maturities	83,410,098.85	83,410,098.85			
Subtotals, miscellanecus	$108,490,560.20	$107,680,091.76	$ 16,799.51	$ 793,668.93	$
Totals	$489,507,989.91	$380,568,697.39	$ 16,268,721.70	$ 91,267,708.11	$ 1,402,862.71

For a summary of expenditures in detail see Table No. 10.

Table No. 8—SUMMARY OF EXPENDITURES FROM 1917 TO JUNE 30, 1950

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures			
		State	County	Government	Miscellaneous Contributore
Construction, primary highways	$190,559,219.34	$100,827,007.22	$ 14,407,596.64	$ 74,160,587.17	$ 1,164,028.31
Construction, secondary highways	23,799,455.60	12,532,379.17	506,440.52	10,714,184.31	46,451.60
Construction, county roads	10,544,106.88	4,845,546.78	724,315.74	4,917,662.92	56,581.44
Cooperation in forest road work	7,524,679.46	7,030,329.09	494,350.37		
Expenditure of city allotments	519,722.98	406,466.08			113,256.90
Minor betterments	9,945,349.40	9,928,894.31	5,272.74	4,000.00	7,182.35
Surveys and engineering county work	7,099,628.47	6,924,100.46	15,672.21	159,855.80	
Real property negotiation expense	852,963.18	852,963.18			
Purchase of rights of way, quarries, etc.	12,452,313.55	12,231,151.01	9,909.75	211,252.79	
Purchase of parks	995,369.75	995,369.75			
Improvements in parks	695,616.70	680,637.70		14,979.00	
Improvements at maintenance stations	1,268,395.37	1,235,935.77		32,459.60	
Improvements of other properties	1,029,047.67	1,029,047.67			
Equipment purchases less credits for sales and depreciation	3,018,602.40	3,018,602.40			
Subtotals, capital outlays	$270,304,470.75	$162,538,430.59	$ 16,163,557.97	$ 90,214,981.59	$ 1,387,500.60
Special maintenance	11,969,356.28	11,777,212.42	2,516.17	176,047.45	13,580.24
General maintenance, primary	74,502,145.68	74,370,398.03	81,368.96	48,596.82	1,781.87
General maintenance, secondary	18,151,262.51	18,145,907.66	1,951.68	3,403.17	
Maintenance of county roads, signs, etc.	806,004.66	801,164.23	2,527.41	2,313.02	
Maintenance of city streets	366,868.64	363,443.51		3,425.13	
Maintenance station upkeep, etc.	567,122.66	567,122.66			
Radio communication system	252,886.85	227,614.85		25,272.00	
Truck load inspection	993,039.09	993,039.09			
District maintenance superintendence	3,104,272.59	3,104,272.59			
Subtotals, maintenance	$110,712,958.96	$110,350,175.04	$ 88,364.22	$ 259,057.59	$ 15,362.11
Administration and general supervision	11,984,711.68	11,984,711.68			
Planning and traffic surveys	2,112,164.05	1,318,495.12		793,668.93	
Travel information bureau	1,803,941.59	1,803,941.59			
Operation of parks	1,121,908.38	1,121,908.38			
Operation of drawbridges and ferries	2,034,309.40	2,017,509.89	16,799.51		
Contribution to retirement fund	1,438,244.28	1,438,244.28			
Miscellaneous	2,994,045.90	2,994,045.90			
Subtotals, operation	$ 23,489,325.28	$ 22,678,856.84	$ 16,799.51	$ 793,668.93	$
Service and clearing accounts	1,591,136.07	1,591,136.07			
Bond interest and maturities	83,410,098.85	83,410,098.85			
Totals	$489,507,989.91	$380,568,697.39	$ 16,268,721.70	$ 91,267,708.11	$ 1,402,862.71

Table No. 9

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1950

Source of Income	1917 to 1943 Inclusive	1944	1945	1946	1947
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$
Bond sales (including accrued interest)	54,577,920.04				
Motor vehicle license fees	78,725,282.82	3,300,038.92	3,416,141.33	3,729,610.64	4,949,150.25
Gasoline tax	148,730,964.31	9,637,960.11	11,033,246.54	15,962,001.35	18,473,988.99
Diesel fuel tax	65,082.40	224,890.71	230,292.05	279,791.30	332,122.48
Motor transportation fees	11,461,825.75	1,897,873.44	1,962,430.84	2,278,000.12	2,940,719.04
One-quarter mill property tax	1,724,032.33				
Fines for traffic law violations	533,190.25	79,346.67	92,046.77	137,066.31	213,351.17
Receipts on rentals, discounts, etc	571,785.36	3,274.01	4,333.64	59,344.66	76,554.92
Subtotals, state funds (gross)	$296,484,501.40	$ 15,143,383.86	$ 16,738,491.17	$ 22,445,814.38	$ 26,985,886.85
Less contributions to state police	3,719,447.57	380,662.52	428,111.75	338,708.71	766,460.09
Less contributions to counties	22,663,361.32	2,311,568.60	2,340,748.48	2,598,427.65	5,318,951.55
Less contributions to state general fund	313,103.37				
Less contributions to cities		736,168.35	745,461.30	827,524.73	1,116,720.52
Less loans to counties					
Subtotals, state funds (net)	$269,788,589.14	$ 11,714,984.39	$ 13,224,169.64	$ 18,681,153.29	$ 19,783,754.69
County cooperation	15,851,156.49	8,550.00	1,550.00	1,550.00	16,200.00
Federal Government cooperation	61,855,601.23	3,108,858.22	2,290,000.27	2,339,091.54	6,771,812.00
Miscellaneous cooperation	1,089,156.18	30,112.71	861.01	385.08	22,421.33
Totals	$348,584,503.04	$ 14,862,505.32	$ 15,516,580.92	$ 21,022,179.91	$ 26,594,188.02

Table No. 9—Continued

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1950

Source of Income	1917 to 1947 Inclusive	1948	1949	1950 (To June 30)	1917 to June 30, 1950
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ 94,418.14
Bond sales (including accrued interest)	54,577,920.04				54,577,920.04
Motor vehicle license fees	94,120,223.96	2,871,162.66	3,117,269.51	6,013,347.12	106,122,003.25
Gasoline tax	203,838,161.30	20,184,096.96	22,280,557.40	10,689,143.10	256,991,958.76
Diesel fuel tax	1,132,178.94	61,959.58			1,194,138.52
Motor transportation fees	20,540,849.19	5,279,130.46	4,985,254.93	2,029,470.39	32,834,704.97
One-quarter mill property tax	1,724,032.33				1,724,032.33
Fines for traffic law violations	1,055,001.17	253,574.27	250,139.45	109,507.26	1,668,222.15
Receipts on rentals, discounts, etc.	715,292.59	48,824.66	44,032.12	11,285.18	819,434.55
Contributions to cities withheld		250,000.00	375,000.00	125,000.00	750,000.00
Receipts from counties to apply on loans				140,949.75	140,949.75
Refund of unexpended balance of state police contributions				241,155.49	241,155.49
Subtotals, state fund (gross)	$377,798,077.66	$ 28,948,748.59	$ 31,052,253.41	$ 19,359,858.29	$457,158,937.95
Less contributions to state police	5,633,390.64	1,035,763.45	1,034,746.51	509,166.24	8,213,066.84
Less contributions to counties	35,233,057.60	5,078,975.14	5,557,875.51	3,702,262.60	49,572,170.85
Less contributions to state general fund	313,103.37				313,103.37
Less contributions to cities	3,425,874.90	2,663,328.79	4,108,624.45	1,732,787.80	11,930,615.94
Less loans to counties			1,119,237.78	8,360.19	1,127,597.97
Subtotals, state funds (net)	$333,192,651.15	$ 20,170,681.21	$ 19,231,769.16	$ 13,407,281.46	$386,002,382.98
County cooperation	15,879,006.49	19,722.70	269,590.62	100,401.89	16,268,721.70
Federal Government cooperation	76,365,363.26	6,180,173.46	6,555,119.04	2,167,052.35	91,267,708.11
Miscellaneous cooperation	1,142,936.31	31,318.34	71,522.66	157,085.40	1,402,862.71
Totals	$426,579,957.21	$ 26,401,895.71	$ 26,128,001.48	$ 15,831,821.10	$494,941,675.50

Table No. 10

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1950

The expenditures in this table include all expenditures in connection with work handled under the direct supervision of the State Highway Commission during the period December 1, 1916 to June 30, 1950.

Classification og Expenditures	1917 to 1943 Inclusive	1944	1945	1946	1947
Construction, primary	$152,429,757.71	$ 1,106,930.02	$ 1,290,274.79	$ 4,999,905.73	$ 8,892,800.12
Construction, secondary	9,927,534.28	1,384,558.63	353,719.73	1,974,460.86	3,336,632.07
Construction, county roads	4,971,132.95	211,034.61	176,341.89	197,079.50	435,259.09
Cooperation in forest road work	6,105,503.86	Cr. 36,824.40	....	100,000.00	200,000.00
Expenditure of city allotments	....	....	....	....	....
Minor betterments	7,119,848.82	56,060.55	150,565.29	258,532.19	552,958.14
Surveys and engineering county work	4,517,881.06	292,879.50	295,024.95	302,966.08	291,955.86
Subtotals, construction	$185,071,658.68	$ 3,014,638.91	$ 2,265,926.65	$ 7,832,944.36	$ 13,709,605.28
Real property negotiation expense	399,414.91	38,184.75	46,255.52	54,406.87	69,627.92
Purchase of rights of way, quarries, etc.	6,108,860.72	222,057.99	237,519.87	530,599.80	709,939.59
Purchase of parks	678,986.48	64,603.15	8,406.56	18,787.52	81,259.17
Improvements in parks	247,885.60	24.00	5,260.29	17,476.58	73,265.35
Improvements at maintenance stations	572,076.15	4,708.01	13,527.28	48,423.28	101,725.01
Improvements at other properties	416,174.33	13,245.03	Cr. 10,075.79	11,155.88	32,818.74
Equipment purchases, sales and depreciation	422,599.04	Cr. 81,663.65	Cr. 94,129.76	270,980.90	884,661.41
Subtotals, capital outlays (including construction)	$193,917,655.91	$ 3,275,798.19	$ 2,472,690.62	$ 8,784,775.19	$ 15,662,902.47

Special maintenance	$ 8,068,482.20	$ 1,202,085.86	$ 71,165.61	$ 291,597.52	$ 381,664.57
General maintenance, primary	44,306,848.21	2,932,783.53	3,370,696.15	4,340,183.29	4,752,248.05
General maintenance, secondary	6,824,787.04	880,898.08	974,574.54	1,279,718.42	1,483,100.53
Maintenance of county roads, signs, etc.	168,040.30	27,117.72	25.01	15,114.66	17,792.39
Maintenance of city streets	309,877.51	16,772.21	150.15	30,105.57	10,797.82
Maintenance station upkeep, etc.	255,122.05	14,536.08	Cr. 22,196.35	62,064.92	69,869.40
Radio communication system	139,581.11	10,203.95	11,220.32	13,413.04	19,399.32
Truck load inspection	141,060.44	71,198.69	85,039.59	106,817.51	130,032.44
District maintenance superintendence	1,926,843.34	125,628.22	128,261.87	147,086.01	172,374.39
Subtotals, maintenance	$ 62,140,642.20	$ 5,281,224.34	$ 4,618,936.89	$ 6,286,100.94	$ 7,037,278.91
Administration and general supervision	7,104,169.00	433,689.86	480,455.03	630,748.98	718,884.73
Planning and traffic surveys	998,930.59	53,426.77	59,989.65	196,577.93	183,486.04
Travel information bureau	676,979.41	21,616.54	57,031.53	147,794.41	229,671.89
Operation of parks	314,532.96	41,208.93	41,183.18	83,080.99	116,361.03
Operation of drawbridges and ferries	1,194,106.04	78,445.35	88,510.64	96,150.09	128,114.72
Contribution to retirement fund				76,038.03	332,870.16
Miscellaneous	2,065,357.97	71,157.18	52,766.67	66,979.86	431,875.05
Subtotals, operation	$ 12,354,075.97	$ 699,544.63	$ 779,936.70	$ 1,297,370.29	$ 2,141,263.62
Service and clearing accounts	Cr. 653,611.19	165,216.11	374,797.14	88,958.46	474,629.68
Bond interest and maturities	76,163,282.61	2,225,168.79	1,681,739.90	1,220,653.38	777,287.19
Totals	$343,922,045.50	$ 11,646,952.06	$ 9,928,101.25	$ 17,677,858.26	$ 26,093,361.87

Table No. 10—Continued

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1950

Classification og Expenditures	1948	1949	1950 (To June 30)	Reclassification Transfers	1917 to June 30, 1950
Construction, primary	$ 10,509,374.83	$ 11,388,936.64	$ 2,770,138.17	Cr. $ 2,828,898.67	$190,559,219.34
Construction, secondary	2,782,024.91	1,566,291.64	530,905.85	1,943,327.63	23,799,455.60
Construction, county roads	1,531,579.44	1,088,628.54	1,113,759.30	819,291.56	10,544,106.88
Cooperation in forest road work	190,000.00	150,000.00	816,000.00	....	7,524,679.46
Expenditure of city allotments	217,434.24	286,049.42	16,239.32	....	519,722.98
Minor betterments	710,390.36	854,340.30	242,594.75	59.00	9,945,349.40
Surveys and engineering county work	331,596.53	683,894.37	383,430.12	....	7,099,628.47
Subtotals, construction	$ 16,272,400.31	$ 16,018,140.91	$ 5,873,067.51	Cr. $ 66,220.48	$249,992,162.13
Real property negotiation expense	96,013.79	102,016.52	47,042.90	....	852,963.18
Purchase of rights of way, quarries, etc.	1,744,009.08	1,988,679.32	910,647.18	....	12,452,313.55
Purchase of parks	Cr. 3,956.10	77,883.45	69,399.52	....	995,369.75
Improvements in parks	89,765.42	165,930.53	74,407.53	21,601.40	695,616.70
Improvements at maintenance stations	162,009.90	241,803.81	83,167.80	40,954.13	1,268,395.37
Improvements at other properties	56,146.05	77,781.80	431,801.63	....	1,029,047.67
Equipment purchases, sales and depreciation	697,926.23	588,363.18	329,865.05	....	3,018,602.40
Subtotals, capital outlays (including construction)	$ 19,114,314.68	$ 19,260,599.52	$ 7,819,399.12	Cr. $ 3,664.95	$270,304,470.75

Special maintenance	$ 819,649.24	$ 1,033,528.15	$ 101,183.13	$	$ 11,969,356.28
General maintenance, primary	5,935,052.75	7,472,267.05	3,285,102.91	Cr. 1,893,036.26	74,502,145.68
General maintenance, secondary	1,874,415,78	2,362,453.29	1,128,396.37	1,342,918.46	18,151,262.51
Maintenance of county roads, signs, etc.	19,494.30	20,358.35	14,003.13	524,058.80	806,004.66
Maintenance of city streets	Cr. 1,967.23	1,132.61			366,868.64
Maintenance station upkeep, etc.	68,166.01	96,653.56	22,906.99		567,122.66
Radio communication system	20,404.87	22,468.37	16,195.87		252,886.85
Truck load inspection	173,769.85	196,502.66	88,617.91		993,039.09
District maintenance superintendence	203,407.38	240,104.46	134,566.92	26,000.00	3,104,272.59
Subtotals, maintenance	$ 9,112,392.95	$ 11,445,468.50	$ 4,790,973.23	Cr. $ 59.00	$110,712,958.96
Administration and general supervision	904,273.86	1,090,432.89	618,333.38	3,723.95	11,984,711.68
Planning and traffic surveys	228,709.26	271,546.00	119,497.81		2,112,164.05
Travel information bureau	254,708.01	230,937.04	185,202.76		1,803,941.59
Operation of parks	169,354.04	232,129.36	124,057.89		1,121,908.38
Operation of drawbridges and ferries	146,900.49	182,093.83	119,988.24		2,034,309.40
Contribution to retirement fund	370,313.64	418,308.86	240,713.59		1,438,244.28
Miscellaneous	156,798.07	117,118.49	31,992.61		2,994,045.90
Subtotals, operation	$ 2,231,057.37	$ 2,542,566.47	$ 1,439,786.28	$ 3,723.95	$ 23,489,325.28
Service and clearing accounts	226,131.12	452,710.74	462,304.01		1,591,136.07
Bond interest and maturities	604,487.29	512,110.69	225,369.00		83,410,098.85
Totals	$ 31,288,383.41	$ 34,213,455.92	$ 14,737,831.64	$	$489,507,989.91

Table No. 11

PRIMARY HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1950

This table gives the totals of the expenditures made for construction work upon each of the several primary state highways during the 34-year period ending June 30, 1950. It includes expenditures for construction, betterments, surveys, rights of way and state expenditures on forest highway work.

Hwy No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
1	Pacific, Jct. City-South	$ 23,906,868.05	$ 16,448,186.16	$ 478,720.75	$ 6,846,325.31	$ 133,635.83
1E	Pacific, East	14,746,931.74	7,366,526.38	300,281.44	6,958,774.41	121,349.51
1W	Pacific, West	14,987,144.49	2,218,556.02	378,008.88	6,358,101.08	32,483.51
2	Columbia River	24,298,441.77	15,952,801.76	234,159.44	7,964,013.06	147,467.51
3	Oswego	1,024,507.67	673,097.85	168,309.82	145,600.00	37,500.00
4	The Dalles-California	8,646,662.36	3,643,306.04	1,013,724.34	3,912,135.79	77,496.19
5	John Day	6,532,701.58	3,429,800.39	599,304.42	2,501,596.77	2,000.00
6	Old Oregon Trail	10,875,808.43	5,725,021.38	715,601.17	4,193,339.03	241,846.85
7	Central Oregon	4,782,852.00	2,745,215.12	154,287.80	1,883,349.08	
8	Oregon-Washington	2,035,139.69	1,554,963.32	72,649.31	407,527.06	
9	Oregon Coast	32,555,336.57	20,101,106.53	2,044,814.63	10,363,050.90	46,364.51
10	Wallowa Lake	2,858,628.34	1,450,750.38	542,380.21	860,417.75	5,080.00
11	Enterprise-Lewiston	1,111,067.85	865,868.36	71,621.49	173,578.00	
12	Baker-Homestead	1,576,416.87	709,694.41	377,811.17	434,133.12	54,778.17
13	Baker-Unity	1,545,861.17	1,040,748.18	331,113.14	173,999.85	
14	Crooked River	453,405.96	354,904.98	98,500.98		
15	McKenzie	2,132,221.08	1,071,077.51	427,755.02	618,179.76	15,208.79
16	Santiam	2,955,483.08	1,876,301.55	232,885.28	801,635.96	44,660.29
17	McKenzie-Bend	97,906.76	92,397.56	5,509.20		
18	Willamette	3,702,476.48	2,121,962.03	311,897.95	1,185,627.29	82,989.21
19	Fremont	1,998,160.45	921,182.60	190,273.36	886,704.49	
20	Klamath Falls-Lakeview	3,105,217.05	2,235,491.40	265,269.22	600,679.65	3,776.78
21	Green Springs	2,123,670.17	1,100,490.75	557,877.85	438,529.42	26,772.15
22	Crater Lake	3,516,694.62	1,790,220.34	195,895.65	1,530,578.63	
23	Dairy-Bonanza	123,512.22	88,648.42	34,863.80		
24	Burns-Crane	686,687.68	311,962.48	48,156.79	326,568.41	
25	Redwood	1,001,821.84	670,184.07	54,507.82	277,129.95	
26	Mt. Hood	2,565,410.24	1,845,350.53	505,287.08	214,772.63	
27	Alsea	1,674,720.65	1,345,618.69	278,757.08	50,344.88	
28	Pendleton-John Day	1,941,684.24	1,020,824.05	162,236.66	758,371.10	252.43
29	Tualatin Valley	2,786,078.83	2,057,450.88	177,813.38	538,115.64	12,698.93
30	Salem-Dallas	1,017,884.03	493,225.95	295,472.12	229,186.01	
31	Albany-Corvallis	596,472.50	129,694.07	130,101.15	299,593.00	37,084.28
32	Three Rivers	612,634.96	532,344.53	21,646.19	58,644.24	
33	Corvallis-Newport	1,872,620.09	1,308,669.13	274,379.35	280,951.35	8,620.26
34	Siuslaw	1,800,754.94	1,254,166.98	476,293.56	70,294.40	
35	Coos Bay-Roseburg	2,354,134.21	1,283,932.80	649,440.43	404,660.98	16,100.00
36	Pendleton-Cold Springs	452,271.78	180,798.52	191,239.44	80,233.82	
37	Wilson River	2,185,266.88	1,629,527.59		555,739.29	
38	Oregon Caves	474,916.91	460,916.91	14,000.00		
39	Salmon River	2,174,708.35	1,631,095.67	58,106.99	485,505.69	
40	Beaverton-Hillsdale	312,572.47	175,319.50	61,252.97	76,000.00	
41	Ochoco	2,788,279.78	1,594,560.31	173,593.13	1,017,626.34	2,500.00
42	Sherman	1,464,330.02	515,380.38	360,879.73	586,322.12	1,747.79
43	Monmouth-Independence	70,104.86	70,104.86			
44	Wapinitia	791,999.50	500,499.48		291,500.02	
45	Umpqua	1,870,536.36	515,584.81	366,174.97	988,776.58	
46	Necanicum	690,425.98	381,567.37	148,986.77	159,871.84	
47	Sunset	7,701,929.80	4,109,553.59	92,000.00	3,500,376.21	
48	John Day-Burns	474,512.88	295,520.88		178,992.00	
49	Lakeview-Burns	589,962.42	341,917.71	31,604.06	216,440.65	
50	Klamath Falls-Malin	1,536,943.07	1,136,018.81	77,816.14	306,070.28	17,037.84
51	West Portland-Hubbard	824,679.10	351,668.57		473,010.53	
52	Heppner	1,263,596.86	946,770.68	315,066.35		1,759.83
53	Warm Springs	2,248,255.56	1,079,225.56		1,169,030.00	
54	Boardman-Stanfield	625,092.84	223,324.96		401,767.88	
55	Halfway	249,290.22	88,252.79	122,798.01	38,239.42	
56	Sullivan Gulch	1,141,869.78	1,141,869.78			
	Flight strips	1,130,707.65	1,085.07		1,129,622.58	
	Undistributed, entire state	41,969.81	41,969.81			
	Undistributed, county general	77,065.43	41,456.57	35,608.86		
	Totals	$221,785,309.02	$131,265,733.76	$14,926,730.35	$74,401,634.25	$ 1,171,210.66

Table No. 12

PRIMARY HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1950

Kinds of expenditures are same as included in Table 14

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
1	Pacific, Jct. City-south	$ 4,992,176.73	$ 4,980,531.03	$ 11,645.70	$	$
1E	Pacific, East	2,821,340.09	2,820,172.83	1,167.26		
1W	Pacific, West	1,804,010.90	1,797,812.97	6,197.93		
2	Columbia River	6,999,365.25	6,985,043.49	12,556.40	870.80	894.56
3	Oswego	232,744.36	232,744.36			
4	The Dalles-California	5,137,100.95	5,126,672.84	769.57	9,658.54	
5	John Day	3,799,352.09	3,794,294.10	5,057.99		
6	Old Oregon Trail	6,162,026.50	6,118,286.14	1,228.14	42,512.22	
7	Central Oregon	2,459,023.71	2,455,307.93	15.45	3,700.33	
8	Oregon-Washington	515,955.88	511,674.71	4,281.17		
9	Oregon Coast	9,577,601.76	9,532,990.73	4,501.67	39,109.31	1,000.00
10	Wallowa Lake	1,731,901.86	1,731,901.86			
11	Enterprise-Lewiston	301,502.96	301,502.96			
12	Baker-Homestead	544,849.42	544,753.71	95.71		
13	Baker-Unity	503,882.73	503,882.73			
14	Crooked River	155,552.06	155,552.06			
15	McKenzie	1,928,491.08	1,917,191.57		11,299.51	
16	Santiam	1,917,746.81	1,910,202.65		7,544.16	
17	McKenzie-Bend	298,109.00	294,453.10		3,655.90	
18	Willamette	1,880,578.65	1,880,578.65			
19	Fremont	1,273,577.22	1,260,485.39		13,091.83	
20	Klamath Falls-Lakeview	1,322,543.79	1,320,894.37		1,649.42	
21	Green Springs	1,403,676.03	1,403,475.26	200.77		
22	Crater Lake	1,557,527.64	1,523,233.28		34,294.36	
23	Dairy-Bonanza	98,365.62	98,365.62			
24	Burns-Crane	160,468.63	160,372.16	96.47		
25	Redwood	680,088.75	680,088.75			
26	Mt. Hood	2,206,340.59	2,195,789.55		10,551.04	
27	Alsea	1,140,173.56	1,140,173.56			
28	Pendleton-John Day	1,664,701.53	1,664,701.53			
29	Tualatin Valley	684,282.05	674,288.84	9,993.21		
30	Salem-Dallas	439,431.26	439,378.31	52.95		
31	Albany-Corvallis	136,358.47	135,558.47	800.00		
32	Three Rivers	1,085,127.06	1,068,189.61	16,937.45		
33	Corvallis-Newport	1,707,964.36	1,705,373.57	320.50	2,270.29	
34	Siuslaw	1,253,751.08	1,242,258.77		11,492.31	
35	Coos Bay-Roseburg	2,388,775.40	2,377,879.12	3,838.17	7,058.11	
36	Pendleton-Cold Springs	277,705.31	277,705.31			
37	Wilson River	1,128,574.89	1,128,574.89			
38	Oregon Caves	173,975.33	173,975.33			
39	Salmon River	1,077,070.86	1,076,769.94	300.92		
40	Beaverton-Hillsdale	114,419.27	112,679.32	1,739.95		
41	Ochoco	1,643,615.84	1,643,615.84			
42	Sherman	1,031,860.84	1,024,553.68		7,307.16	
43	Monmouth-Independence	74,318.28	74,318.28			
44	Wapinitia	876,814.28	876,814.28			
45	Umpqua	663,805.35	663,805.35			
46	Necanicum	657,916.76	657,916.76			
47	Sunset	1,264,997.06	1,264,997.06			
48	John Day-Burns	542,693.07	542,693.07			
49	Lakeview-Burns	502,913.96	502,913.96			
50	Klamath Falls-Malin	489,151.80	489,151.80			
51	West Portland-Hubbard	14,687.95	14,687.95			
52	Heppner	806,484.12	801,892.63		4,591.49	
53	Warm Springs	219,957.24	219,957.24			
54	Boardman-Stanfield	81,405.12	81,405.12			
55	Halfway	143,162.55	143,062.10	100.45		
	Supervision	2,566,613.15	2,566,613.15			
	Undistributed	144,943.67	144,943.67			
	Totals	$ 87,463,552.53	$ 87,169,103.36	$ 81,897.83	$ 210,656.78	$ 1,894.56

Table No. 13

PRIMARY HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1950

Kinds of expenditures are the same as included in Table No. 11

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 7,005,917.29	$ 3,598,580.51	$ 1,007,557.69	$ 2,310,792.30	$ 88,986.79
Benton	3,646,659.95	2,350,789.10	372,439.94	902,405.64	21,025.27
Clackamas	6,881,125.22	4,210,724.01	482,535.78	2,047,858.37	140,007.06
Clatsop	9,102,547.23	4,751,568.18	448,340.54	3,902,638.51	
Columbia	3,832,360.27	2,975,772.82	12,060.23	842,824.59	1,702.63
Coos	9,537,456.41	6,259,226.09	821,548.46	2,431,007.59	25,674.27
Crook	1,635,786.07	1,072,288.04	198,071.21	362,926.82	2,500.00
Curry	5,268,002.42	3,661,794.08	227,542.72	1,378,665.62	
Deschutes	2,800,451.94	1,559,047.84	152,817.14	1,068,633.50	19,953.46
Douglas	14,795,648.93	9,951,705.55	1,213,134.95	3,596,339.91	34,468.52
Gilliam	3,181,195.48	1,866,185.14	266,278.07	1,046,732.27	2,000.00
Grant	3,843,217.03	2,005,002.56	188,600.65	1,649,613.82	
Harney	3,497,125.05	1,518,283.32	128,701.27	1,850,140.46	
Hood River	3,071,911.93	2,625,712.99	283,001.46	128,735.96	34,461.52
Jackson	8,903,994.88	4,962,970.18	523,074.48	3,374,528.04	43,422.18
Jefferson	2,247,228.99	1,120,910.01	138,482.18	974,369.94	13,466.86
Josephine	6,008,904.87	3,900,630.82	110,077.78	1,998,196.27	
Klamath	10,494,811.59	5,800,960.65	696,293.23	3,925,807.60	71,750.11
Lake	3,044,097.69	1,741,978.58	233,414.80	1,068,704.31	
Lane	13,963,575.68	7,935,948.37	1,784,732.06	4,065,249.85	177,645.40
Lincoln	9,314,160.61	6,488,703.87	220,223.57	2,604,486.20	746.97
Linn	6,997,518.01	3,800,826.50	444,522.78	2,655,609.91	96,558.82
Malheur	4,812,689.53	2,862,356.46	256,725.86	1,663,607.21	30,000.00
Marion	4,218,769.01	1,711,254.78	241,862.34	2,265,413.44	238.45
Morrow	1,603,236.46	1,121,703.42	317,758.89	162,014.32	1,759.83
Multnomah	19,139,715.74	11,206,279.69	62,825.83	7,783,463.32	87,146.90
Polk	3,628,572.07	2,068,102.86	155,023.89	1,404,056.22	1,389.10
Sherman	1,788,612.81	801,624.68	273,903.11	711,337.23	1,747.79
Tillamook	6,634,428.24	4,172,626.17	511,286.51	1,914,472.29	36,043.27
Umatilla	7,885,855.58	4,568,972.12	595,928.60	2,689,378.55	31,576.31
Union	4,351,359.81	2,558,968.87	602,607.02	1,024,462.76	165,321.16
Wallowa	2,265,389.69	1,374,859.21	361,995.78	528,534.70	
Wasco	7,767,768.09	3,940,423.57	868,761.50	2,948,353.36	10,229.66
Washington	9,393,981.61	6,126,518.15	100,412.78	3,155,796.89	11,253.79
Wheeler	2,842,917.97	1,530,463.04	189,078.49	1,123,376.44	
Yamhill	5,210,589.44	3,043,868.68	435,108.76	1,711,477.46	20,134.54
Flight Strips	1,130,707.65	1,085.07		1,129,622.58	
Undistributed	37,017.78	37,017.78			
Totals	$221,785,309.02	$131,285,733.76	$14,926,730.35	$74,401,634.25	$ 1,171,210.66
Construction	$189,428,511.69	$100,825,922.15	$14,407,596.64	$73,030,964.59	$ 1,164,028.31
Minor betterment	8,284,338.49	8,268,657.58	4,498.56	4,000.00	7,182.35
Right of way	10,727,380.45	10,562,093.64	9,909.75	155,377.06	
Surveys	5,476,700.21	5,384,655.16	10,375.03	81,670.02	
Forest highway cooperation	6,737,670.53	6,243,320.16	494,350.37		
Flight Strips	1,130,707.65	1,085.07		1,129,622.58	
Totals	$221,785,309.02	$131,285,733.76	$14,926,730.35	$74,401,634.25	$ 1,171,210.66

Table No. 14

PRIMARY HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1950

This table gives the totals of the expenditures made for primary highway maintenance work in each of the several counties during the 34-year period ending June 30, 1950. It includes all expenditures for special maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 3,135,523.08	$ 3,135,326.92	$ 196.16	$	$
Benton	2,103,516.99	2,103,201.18	315.81		
Clackamas	2,184,245.71	2,184,004.74	240.97		
Clatsop	2,600,614.50	2,590,923.83	8,796.11		894.56
Columbia	1,132,971.51	1,132,971.51			
Coos	3,597,853.57	3,560,543.09	6,728.62	30,581.86	
Crook	1,004,891.48	1,004,891.48			
Curry	2,406,533.96	2,402,156.10	205.18	4,172.68	
Deschutes	2,736,206.53	2,723,960.18	240.10	12,006.25	
Douglas	4,286,818.39	4,282,677.56	4,140.83		
Gilliam	1,543,143.23	1,540,844.09	2,299.14		
Grant	2,379,370.92	2,376,940.75	2,430.17		
Harney	1,451,413.37	1,451,301.45	111.92		
Hood River	1,810,101.97	1,799,550.93		10,551.04	
Jackson	3,318,246.43	3,279,747.41	4,547.33	33,951.69	
Jefferson	1,122,638.35	1,116,817.43		5,820.92	
Josephine	1,427,059.54	1,425,417.95	1,641.59		
Klamath	4,953,067.00	4,948,838.19	48.52	4,180.29	
Lake	2,054,869.05	2,040,127.80		14,741.25	
Lane	5,480,560.82	5,459,124.84	1,899.06	19,536.92	
Lincoln	3,064,372.86	3,058,646.90	320.50	5,405.46	
Linn	2,260,967.25	2,253,684.67	1,133.54	6,149.04	
Malheur	2,395,785.22	2,395,325.46	459.76		
Marion	909,806.21	909,595.80	210.41		
Morrow	1,345,915.93	1,338,347.71	2,976.73	4,591.49	
Multnomah	2,846,547.77	2,846,547.77			
Polk	1,255,001.67	1,254,402.60	599.07		
Sherman	1,176,013.42	1,168,706.26		7,307.16	
Tillamook	3,377,506.86	3,359,449.56	8,779.59	8,277.71	1,000.00
Umatilla	4,007,439.24	3,959,457.01	4,599.21	43,383.02	
Union	2,633,680.53	2,633,165.84	514.69		
Wallowa	1,138,544.23	1,138,544.23			
Wasco	3,170,230.16	3,169,453.55	776.61		
Washington	1,417,157.46	1,405,616.71	11,540.75		
Wheeler	1,421,683.47	1,419,989.75	1,693.72		
Yamhill	1,601,697.03	1,587,245.29	14,451.74		
Supervision	2,566,613.15	2,566,613.15			
Undistributed	144,943.67	144,943.67			
Totals	$87,463,552.53	$87,169,103.36	$ 81,897.83	$ 210,656.78	$ 1,894.56
Special maintenance	$10,394,793.70	$10,232,092.18	$ 528.87	$ 162,059.96	$ 112.69
General maintenance	74,502,145.68	74,370,398.03	81,368.96	48,596.82	1,781.87
Supervision	2,566,613.15	2,566,613.15			
Totals	$87,463,552.53	$87,169,103.36	$ 81,897.83	$ 210,656.78	$ 1,894.56

Table No. 15

SECONDARY STATE HIGHWAY CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1950

This table gives the totals of the expenditures made for secondary highway construction work in each of the several counties during the 34-year period ending June 30, 1950. It includes expenditures for construction, minor betterments, surveys, rights of way and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 411,919.97	$ 245,498.97	$	$ 166,421,00	$
Benton	627,737.23	463,487.57	2,350.00	161,899.66	
Clackamas	1,564,073.73	866,419.21	47,825.95	949,828.57	
Clatsop	628,211.96	308,285.09	9,070.98	310,855.89	
Columbia	468,293.18	260,524.35		207,768.83	
Coos	757,866.14	431,484.29	2,000.00	324,381.85	
Crook	659,184.64	400,745.02	64,606.79	193,832.83	
Curry	37,094.99	14,215.73		22,879.26	
Deschutes	466,483.61	313,841.30	36,245.19	116,397.12	
Douglas	1,093,721.26	779,323.45		314,397.81	
Gilliam	451,134.12	356,634.40		94,499.72	
Grant	684,879.61	328,490.86	9,086.75	347,302.00	
Harney	431,579.25	307,952.65	23,196.60	100,430.00	
Hood River	425,941.82	274,989.14		150,952.68	
Jackson	999,372.73	758,465.39		240,907.34	
Jefferson	393,954.88	192,110.68		201,844.20	
Josephine	400,823.70	172,149.09		228,674.61	
Klamath	688,030.38	301,523.32	70,558.62	315,948.44	
Lake	542,221.03	293,626.58		248,594.45	
Lane	1,449,064.60	1,039,316.85	59,856.49	349,235.92	655.34
Lincoln	791,156.38	505,176.48		285,979.90	
Linn	855,772.39	609,099.14	23,000.00	214,032.79	9,640.46
Malheur	3,044,701.53	1,149,206.34		1,889,308.72	6,186.47
Marion	2,079,531.67	1,560,836.72	2,012.45	493,429.17	23,253.33
Morrow	930,841.51	518,091.12		412,750.39	
Multnomah	1,080,752.52	535,378.64		545,373.88	
Polk	1,224,297.66	355,965.89		868,331.77	
Sherman	283,190.56	260,530.56		22,660.00	
Tillamook	248,276.66	226,317.87		21,958.79	
Umatilla	1,518,631.51	997,606.44	142,939.72	378,085.35	
Union	668,363.35	426,122.18		242,241.17	
Wallowa	384,142.37	193,947.47		190,194.90	
Wasco	226,955.82	160,966.39	5,461.43	60,528.00	
Washington	624,860.89	330,177.72		294,683.17	
Wheeler	112,507.62	72,761.62	5,000.00	34,746.00	
Yamhill	562,413.00	476,307.23	5,012.92	74,376.85	6,716.00
Totals	$27,817,984.27	$16,487,575.75	$508,223.89	$10,775,733.03	$ 46,451.60
Construction	$23,799,455.60	$12,532,379.17	$506,440.52	$10,714,184.31	$ 46,451.60
Minor betterment	1,557,747.06	1,556,972.88	774.18		
Right of way	746,985.04	737,537.67		9,447.37	
Surveys	1,040,463.24	987,352.70	1,009.19	52,101.35	
Forest highway cooperation	673,333.33	673,333.33			
Totals	$27,817,984.27	$16,487,575.75	$508,223.89	$10,775,733.03	$ 46,451.60

Table No. 16

SECONDARY HIGHWAY MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1950

This table gives the totals of the expenditures made for secondary highway maintenance work in each of the several counties during the 34-year period ending June 30, 1950. It includes expenditures for special maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 418,146.42	$ 418,112.69	$ 33.73	$	$
Benton	298,337.89	298,337.89			
Clackamas	1,239,996.60	1,239,996.60			
Clatsop	784,808.90	778,891.65		5,917.25	
Columbia	663,611.04	663,611.04			
Coos	911,992.67	911,992.67			
Crook	369,301.69	369,301.69			
Curry	25,351.48	25,351.48			
Deschutes	360,463.51	360,463.51			
Douglas	604,438.08	604,438.08			
Gilliam	106,995.11	106,995.11			
Grant	102,086.29	102,086.29			
Harney	215,130.41	215,130.41			
Hood River	191,223.20	191,223.20			
Jackson	671,567.48	666,754.36	275.14	4,537.98	
Jefferson	118,567.40	118,567.40			
Josephine	285,126.33	283,674.36		1,451.97	
Klamath	1,221,197.67	1,217,794.50		3,403.17	
Lake	179,911.38	179,911.38			
Lane	1,254,721.76	1,254,613.76	108.00		
Lincoln	422,344.15	422,344.15			
Linn	1,207,598.60	1,207,148.32	450.28		
Malheur	928,920.88	928,920.88			
Marion	1,062,731.24	1,062,731.24			
Morrow	361,715.93	361,715.93			
Multnomah	268,344.81	254,877.26			13,467.55
Polk	856,995.11	856,995.11			
Sherman	101,835.75	101,835.75			
Tillamook	193,151.30	193,151.30			
Umatilla	1,173,151.43	1,168,066.78	3,071.83	2,012.82	
Union	611,748.43	611,748.43			
Wallowa	188,165.86	188,165.86			
Wasco	79,362.48	79,362.48			
Washington	965,792.75	965,792.75			
Wheeler	200,187.16	200,187.16			
Yamhill	1,065,666.32	1,065,666.32			
Supervision	535,463.74	535,463.74			
Totals	$20,246,151.25	$20,211,421.53	$ 3,938.98	$ 17,323.19	$ 13,467.55*
Special maintenance	$ 1,559,425.00	$ 1,530,050.13	$ 1,987.30	$ 13,920.02	$ 13,467.55
General maintenance	18,151,262.51	18,145,907.66	1,951.68	3,403.17	
Supervision	535,463.74	535,463.74			
Totals	$20,246,151.25	$20,211,421.53	$ 3,938.98	$ 17,323.19	$ 13,467.55

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* War Department Funds.

Table No. 17

LOCAL ROAD AND STREET CONSTRUCTION EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1950

This table gives the total expenditures for construction work on roads and streets that are not on the state highway system. It includes county road construction, city allotment projects, minor betterments, surveys, rights of way and state expenditures on forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 169,508.68	$ 102,064.08	$ 14,091.98	$ 53,352.62	$
Benton	217,576.31	163,013.32		54,562.99	
Clackamas	327,677.29	210,809.94	24,102.11	92,528.35	236.89
Clatsop	148,510.61	106,608.94	132.79	41,768.88	
Columbia	238,435.98	93,941.70	116.36	144,377.92	
Coos	286,357.84	64,253.16		222,104.68	
Crook	3,752.83	3,752.83			
Curry	29,629.34	17,014.04			12,615.30
Deschutes	264,479.51	211,911.94	15,551.57	36,366.00	650.00
Douglas	1,264,355.73	728,551.12	45,428.28	480,376.33	10,000.00
Gilliam	7,936.65		7,936.65		
Grant	14,923.50	14,923.50			
Harney	7,592.16	7,592.16			
Hood River	4,910.92	4,910.92			
Jackson	323,239.03	93,325.17	10,878.40	216,035.46	3,000.00
Jefferson	37,866.19	13,993.30	3,800.00	20,072.89	
Josephine	145,321.64	133,247.64		12,074.00	
Klamath	887,464.44	401,661.93	15,575.07	467,206.06	3,021.38
Lake	192,136.64	75,123.53	23,287.43	92,700.00	1,025.68
Lane	570,422.27	364,800.80	197,341.98	6,582.83	1,696.66
Lincoln	44,718.49	38,581.42		1,337.07	4,800.00
Linn	363,408.59	222,996.03	51,295.46	39,498.00	49,619.10
Malheur	79,476.37	34,739.79	13,996.58	30,740.00	
Marion	1,218,387.45	841,815.50	101,491.02	275,080.93	
Morrow	3,166.21	3,166.21			
Multnomah	2,199,983.36	551,544.47	5,701.90	1,630,919.99	11,817.00
Polk	394,564.44	238,317.07	80,995.63	53,116.00	22,135.74
Sherman	202,881.61	115,134.69	419.50	87,327.42	
Tillamook	232,182.47	98,970.70	33,426.77	78,892.98	20,892.02
Umatilla	260,364.32	207,464.71	19,018.70	31,305.58	2,575.33
Union	203,150.66	99,674.71		103,475.95	
Wallowa	99,172.62	45,347.02	10,770.60	43,055.00	
Wasco	385,843.81	202,806.47	21,933.27	161,104.07	
Washington	607,896.25	352,101.45	14,322.79	241,472.01	
Wheeler	183,154.04	76,648.04		106,506.00	
Yamhill	404,136.33	207,630.50	16,988.89	153,763.70	25,753.24
Totals	$12,024,584.58	$ 6,148,438.80	$728,603.73	$4,977,703.71	$169,838.34
Construction—county roads	$10,544,106.88	$ 4,845,546.78	$724,315.74	$4,917,662.92	$ 56,581.44
Construction—city allotments	525,847.96	412,591.06			113,256.90
Minor betterment	103,263.85	103,263.85			
Right of way	172,999.38	139,043.02		33,956.36	
Surveys	564,690.91	534,318.49	4,287.99	26,084.23	
Forest highway cooperation	113,675.60	113,675.60			
Totals	$12,024,584.58	$ 6,148,438.80	$728,603.73	$4,977,703.71	$169,838.34

Table No. 18

LOCAL ROAD AND STREET MAINTENANCE EXPENDITURES SUMMARIZED BY COUNTIES

From 1917 to June 30, 1950

This table gives the total expenditures for maintenance work on roads and streets that are not on the state highway system. It includes expenditures for maintenance of county road signs, prior maintenance of sections of state highways which have been abandoned, and city street maintenance.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 116,444.10	$ 115,884.21	$ 559.89	$
Benton	27,211.57	27,211.57		
Clackamas	45,063.51	45,063.51		
Clatsop	31,262.88	31,262.88		
Columbia	12,098.54	12,098.54		
Coos	19,323.53	17,010.51		2,313.02
Crook	2,060.93	2,060.93		
Curry	1,261.51	1,261.51		
Deschutes	10,854.68	10,854.68		
Douglas	40,502.27	39,859.88	642.39	
Gilliam	2,156.60	2,156.60		
Grant	3,298.62	3,298.62		
Harney	2,802.80	2,802.80		
Hood River	7,699.88	7,699.88		
Jackson	77,254.82	77,254.82		
Jefferson	6,435.79	6,435.79		
Josephine	42,387.60	42,387.60		
Klamath	82,349.42	82,349.42		
Lake	11,767.33	11,767.33		
Lane	65,355.37	65,355.37		
Lincoln	5,211.04	5,211.04		
Linn	175,531.08	174,234.44	1,296.64	
Malheur	8,076.52	8,076.52		
Marion	77,343.16	77,343.16		
Morrow	4,215.16	4,215.16		
Multnomah	69,476.58	69,476.58		
Polk	103,487.63	103,487.63		
Sherman	2,333.42	2,333.42		
Tillamook	8,529.09	5,103.96		3,425.13
Umatilla	48,430.18	48,334.22	28.49	67.47
Union	10,044.73	10,044.73		
Wallowa	9,849.52	9,849.52		
Wasco	9,408.20	9,408.20		
Washington	25,543.21	25,543.21		
Wheeler	2,630.56	2,630.56		
Yamhill	20,309.05	20,309.05		
District maintenance superintendence	2,195.70	2,195.70		
Totals	$ 1,190,206.58	$ 1,181,873.55	$ 2,527.41	$ 5,805.62
Special maintenance	$ 15,137.58	$ 15,070.11	$	$ 67.47
General maintenance	785,646.31	780,805.88	2,527.41	2,313.02
Road signs	20,358.35	20,358.35		
City street maintenance	366,868.64	363,443.51		3,425.13
Supervision	2,195.70	2,195.70		
Totals	$ 1,190,206.58	$ 1,181,873.55	$ 2,527.41	$ 5,805.62

Table No. 19

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY COUNTIES

Years 1917 to 1949, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the Bureau of Public Roads, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by highways see table No. 20.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 186,357.66	$ 44,845.60	$ 584.00	$ 140,928.06
Clackamas	1,084,637.96	525,124.95		559,513.01
Coos	231,790.61		83,000.00	148,790.61
Crook	772,918.72	39,634.17	26,875.00	706,409.55
Curry	886,215.46	116,289.11	30,000.00	739,926.35
Deschutes	364,154.83	144,378.47	5,000.00	214,776.36
Douglas	2,521,663.03	562,798.62	275,054.98	1,683,809.43
Grant	2,440,842.31	159,639.74	250,046.25	2,031,156.32
Harney	640,394.46		65,000.00	575,394.46
Hood River	756,801.96	314,844.19		441,957.77
Jackson	1,399,717.10	296,095.20	3,438.81	1,100,183.09
Jefferson	350,725.39	56,000.00	13,000.00	281,725.39
Josephine	504,894.27	294,433.59	17,522.99	192,937.69
Klamath	1,059,276.67	209,114.95	179,954.97	670,206.75
Lake	1,130,590.12	227,455.92		903,134.20
Lane	6,128,362.84	1,488,575.43	312,500.00	4,327,287.41
Lincoln	3,700,103.18	889,652.93	315,000.00	2,495,450.25
Linn	2,566,663.28		202,014.00	2,364,649.28
Marion	4,865,583.23	450,000.00	173,586.00	4,241,997.23*
Morrow	140,057.14		75,000.00	65,057.14
Multnomah	1,500,925.42	52,500.00		1,448,425.42
Tillamook	1,052,580.61	328,153.51	18,624.69	705,802.41
Umatilla	887,555.87	155,287.23	145,718.32	586,550.32
Union	437,389.42			437,389.42
Wallowa	568,829.64	67,951.65	39,210.35	461,667.64
Wasco	788,828.88	180,844.08	25,000.00	582,984.80
Wheeler	869,766.71	105,060.12	29,900.00	734,806.59
Totals	$37,837,626.77	$ 6,708,679.46	$ 2,286,030.36	$28,842,916.95*

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* Includes $3,548,150.88 War Department funds expended on the North Santiam Highway.

Table No. 20

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY HIGHWAYS

Years 1917 to 1949, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the Bureau of Public Roads, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing table Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by counties see table No. 19.

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures		
			By State	By County	By Federal Government
1	Pacific	$ 397,638.72	$ 182,776.86	$ 23,000.00	$ 191,861.86
2	Columbia River	1,758,374.37	117,500.00		1,640,874.37
4	The Dalles-California	648,505.02	178,806.28	149,592.81	320,105.93
5	John Day	852,276.36	174,485.34	162,110.76	515,680.26
9	Oregon Coast	3,882,693.35	1,068,915.37	233,000.00	2,580,777.98
11	Enterprise -Lewiston	448,867.72	67,951.65	39,210.35	341,705.72
15	McKenzie	898,606.12	429,278.06	20,000.00	449,328.06
16	Santiam	2,133,278.05	56,000.00	131,000.00	1,946,278.05
18	Willamette	2,779,653.49	196,000.00	37,500.00	2,546,153.49
19	Fremont	357,494.37	879.37		356,615.00
20	Klamath Falls-Lakeview	829,164.57	226,919.50		602,245.07
22	Crater Lake	691,486.47	301,060.92	26,300.97	364,124.58
25	Redwood	194,160.63	130,121.32	9,522.99	54,516.32
26	Mt. Hood	1,241,711.36	566,436.42		675,274.94
27	Alsea	1,535,584.37	410,818.40	165,000.00	959,765.97
28	Pendleton-John Day	1,387,243.69	185,287.23	202,218.32	999,738.14
32	Three Rivers	423,943.55	149,528.51	18,624.69	255,790.35
34	Siuslaw	1,962,790.55	708,521.94	260,000.00	994,268.61
38	Oregon Caves	310,733.64	164,312.27	8,000.00	138,421.37
39	Salmon River	1,034,305.79	180,000.00		854,305.79
41	Ochoco	1,315,467.64	144,694.29	31,775.00	1,138,998.35
44	Wapinitia	772,332.88	281,376.80	25,000.00	465,956.08
45	Umpqua	323,273.90		128,001.65	195,272.25
48	John Day-Burns	1,769,635.89		97,019.49	1,672,616.40
53	Warm Springs	250,775.61			250,775.61
162	North Santiam	5,718,752.45	450,000.00	257,600.00	5,011,152.45*
181	Siletz	147,634.94		30,000.00	117,634.94
230	Tiller-Trail	1,506,870.15	223,333.33	124,053.33	1,159,483.49
232	Crater Lake-North	70,669.32			70,669.32
233	West Diamond Lake	638,536.94			638,536.94
321	Heppner-Spray	467,274.93		100,000.00	367,274.93
330	Weston-Elgin	583,383.78			583,383.78
350	Little Sheep Creek	119,961.92			119,961.92
421	Klamath Lake	7,683.46			7,683.46
424	Sand Creek	53,314.04			53,314.04
425	East Diamond	209,871.13		7,500.00	202,371.13
	Timberline (State coop. only)	108,000.00	108,000.00		
	Cascade Lakes (state coop. only)	5,675.60	5,675.60		
	Totals	$37,837,626.77	$ 6,708,679.46	$ 2,286,030.36	$28,842,916.95*

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* Includes $3,548,150.88 War Department funds expended on the Niagara-Detroit Project.

Table No. 21

STATISTICS PERTAINING TO FOREST HIGHWAY WORK ON STATE HIGHWAYS

The statistics here given apply to highway work in the State of Oregon performed under supervision of the Bureau of Public Roads. All the work included is upon state highways at points where these highways are in or adjacent to National Forests. The work is financed under cooperative agreements between the federal government, the state, and the counties of the state, the federal funds being Oregon's proportionate share of funds annually appropriated by Congress for forest road work.

The amounts of county and federal government expenditures here given, and the mileages of work performed, are as reported by the Bureau of Public Roads. The amounts of state expenditures are as shown by the disbursement records of the State Highway Commission.

EXPENDITURES ON FOREST HIGHWAY WORK

Year	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
1918-1919-1920	$ 1,568,432.01	$ 809,261.58	$ 102,271.45	$ 656,898.98
1921-1922	1,630,589.13	724,970.53	67,142.21	838,476.39
1923-1924	3,788,011.33	1,092,660.31	725,942.05	1,969,408.97
1925-1926	2,068.546.50	759,762.58	481,431.18	827,352.74
1927	789,771.22	147,859.76	170,611.36	471,300.10
1928	614,910.84	103,084.09	75,263.79	436,562.96
1929	677,063.92	82,000.00	42,000.00	553,063.92
1930	1,467,833.88	696,986.98	108,050.00	662,796.90
1931	3,119,616.33	653,385.58	258,000.00	2,208,230.75
1932	778,423.67	202,700.00	41,474.39	534,249.28
1933	1,845,651.90	138,913.87	211,586.74	1,495,151.29
1934	2,135,663.35	28,416.93	Cr. 1,000.00	2,108,246.42
1935	1,097,416.83	52,501.65	Cr. 2,842.81	1,047,757.99
1936	1,167,044.72	205,000.00		962,044.72
1937	1,513,778.74	112,500.00		1,401,278.74
1938	944,053.77	Cr. 25,000.00	6,100.00	962,953.77
1939	995,602.57	35,000.00		960,602.57
1940	580,947.92			580,947.92
1941	591,941.05	285,500.00		306,441.05
1942	237,410.05			237,410.05
1943	15,781.87	Cr. 36,824.40		52,606.27
1944	37,036.29			37,036.29
1945	116,994.79			116,994.79
1946	177,327.93	100,000.00		77,327.93
1947	1,541,889.79	200,000.00		1,341,889.79
1948	3,788,076.98	190,000.00		3,598,076.98
1949	4,547,809.39	150,000.00		4,397,809.39
Totals	$37,837,626.77	$ 6,708,679.46	$ 2,286,030.36	$28,842,916.95

Table No. 21—Continued

MILEAGES OF FOREST HIGHWAY WORK COMPLETED ON STATE HIGHWAY SYSTEM

Year	Concrete Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Unoiled Surfacing (Miles)	Graded Only (Miles)
1918	....	....	....	....	4.30
1919	....	....	....	....	62.90
1920	....	....	....	22.59	56.10
1921	....	....	....	38.24	20.68
1922	....	....	....	22.37	15.69
1923	....	....	....	87.92	61.00
1924	....	....	....	74.62	153.37
1925	....	....	....	99.94	50.70
1926	....	....	....	41.41	52.32
1927	....	....	....	53.50	39.80
1928	....	....	....	17.60	23.80
1929	....	....	....	6.00	19.00
1930	....	....	....	25.88	30.35
1931	....	....	....	21.35	61.29
1932	....	....	....	28.36	14.61
1933	....	24.94	....	74.31	28.33
1934	....	24.65	53.51	18.08	19.65
1935	....	....	30.71	....	8.38
1936	....	....	....	43.59	41.84
1937	0.18	37.26	23.22	41.73	17.85
1938	....	8.36	7.10	23.31	23.04
1939	....	16.89	20.69	37.78	8.55
1940	....	6.07	40.34	46.41	25.00
1941	....	....	....	7.63	....
1942	....	5.21	3.87	16.72	13.03
1943	....	5.24	....	5.24	5.24
1944	....	....	....	....	....
1945	....	0.29	....	0.29	0.29
1946	....	....	....	....	....
1947	....	....	....	....	6.42
1948	....	17.51	....	17.51	5.08
1949	....	....	13.49	13.49	29.74
Totals	0.18	146.42	192.93	885.87	898.35

Table No. 22

COUNTY DISBURSEMENTS FOR ROAD PURPOSES
1945 to 1949, Inclusive

County	1945	1946	1947	1948	1949
Baker	$ 130,819.74	$ 107,759.99	$ 132,633.91	$ 127,044.91	$ 148,087.63
Benton	130,961.69	182,608.43	233,622.95	171,168.94	202,724.71
Clackamas	341,798.50	476,406.44	360,476.08	404,763.95	633,491.30
Clatsop	143,638.01	188,217.63	230,681.23	217,471.80	268,335.75
Columbia	162,741.04	218,805.55	200,193.34	184,166.35	183,680.47
Coos	174,641.51	258,791.16	502,735.07	381,869.03	496,655.93
Crook	24,781.71	29,247.65	35,384.07	52,280.44	93,706.33
Curry	20,000.00*	86,779.60	93,011.54	30,000.00	70,000.00
Deschutes	26,899.88	101,982.71	111,696.84	136,581.42	157,353.39
Douglas	281,157.01	384,141.62	619,343.94	739,714.99	1,177,181.08
Gilliam	25,000.00*	95,563.00	50,000.00*	73,388.40	69,644.50
Grant	58,733.77	106,750.35	73,234.50	100,888.52	116,309.38
Harney	33,334.76	96,097.79	87,837.79	85,880.36	91,830.31
Hood River	50,000.00*	81,678.82	99,912.65	102,326.81	137,413.88
Jackson	158,129.07	328,663.37	546,832.82	534,064.53	643,031.62
Jefferson	36,433.68	39,142.74	25,567.61	28,362.32	56,220.46
Josephine	95,898.07	116,321.16	112,626.47	223,811.33	229,701.17
Klamath	295,850.00	443,584.18	467,699.23	302,680.99	468,570.45
Lake	45,000.00*	50,000.00*	50,000.00*	157,020.64	139,562.16
Lane	574,540.99	750,234.74	809,104.77	673,914.26	1,168,434.42
Lincoln	85,872.01	175,775.62	189,334.28	236,581.60	311,239.50
Linn	337,777.79	377,869.23	495,691.07	556,721.88	733,490.92
Malheur	141,674.05	64,809.24	54,299.65	110,609.51	344,066.54
Marion	253,532.65	297,897.43	412,820.23	528,684.35	680,952.88
Morrow	44,387.60	73,896.60	81,180.38	24,366.60	153,692.90
Multnomah	800,524.55	2,293,652.00	1,835,404.00	2,499,136.94	3,011,068.60
Polk	166,475.30	162,828.27	209,725.75	180,002.36	246,464.60
Sherman	32,727.55	48,987.34	79,050.49	48,500.32	56,696.04
Tillamook	100,000.00*	270,795.86	408,750.28	252,905.97	382,420.46
Umatilla	189,894.26	235,615.15	370,067.79	975,014.78	788,108.62
Union	128,829.00	150,574.57	137,746.15	179,394.44	187,050.62
Wallowa	61,921.80	132,159.45	107,362.04	108,184.68	235,327.39
Wasco	109,495.91	174,647.58	170,761.65	128,520.97	206,436.50
Washington	315,484.35	325,032.68	401,203.13	457,137.75	528,768.26
Wheeler	12,000.00*	15,000.00*	15,000.00*	42,774.10	49,989.19
Yamhill	150,000.00*	164,544.85	182,912.92	222,069.33	277,432.20
Totals	$5,740,956.25	$9,106,862.80	$9,993,904.62	$11,328,005.57	$14,745,140.16

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* These are estimated expenditures, as no reports were received from the counties.

Table No. 23

COUNTY BOND AND WARRANT INDEBTEDNESS IN CONNECTION WITH ROAD AND BRIDGES

July 1, 1950

The information contained in this table was compiled by the State Treasurer.

County	Bonds Outsanding	Road Warrants Outstanding	Total Road and Bridge Debt	Sinking Fund or Cash on Hand	Net Road and Bridge Debt
Baker	$	$	$	$	$
Benton					
Clackamas					
Clatsop					
Columbia					
Coos					
Crook					
Curry					
Deschutes					
Douglas					
Gilliam					
Grant	44,000.00		44,000.00	14,100.00	29,900.00
Harney					
Hood River					
Jackson	4,000.00		4,000.00	4,000.00	
Jefferson					
Josephine					
Klamath	50,000.00		50,000.00	50,000.00	
Lake					
Lane		5,007.39	5,007.39		5,007.39
Lincoln		47,352.46	47,352.46	19,139.08	28,213.38
Linn					
Malheur					
Marion					
Morrow	77,000.00		77,000.00	32,321.83	44,678.17
Multnomah	3,918,000.00		3,918,000.00	360,893.08	3,557,106.92
Polk					
Sherman					
Tillamook		18,905.73	18,905.73	4,547.97	14,357.76
Umatilla	450,000.00		450,000.00	147,743.86	302,256.14
Union					
Wallowa					
Wasco	450,000.00		450,000.00	2,581.25	447,418.75
Washington					
Wheeler	7,000.00		7,000.00		7,000.00
Yamhill					
Totals	$5,000,000.00	$ 71,265.58	$5,071,265.58	$ 635,327.07	$4,435,938.51

Table No. 24

STATE HIGHWAY BOND INDEBTEDNESS ACCOUNT

Calendar Year	Annual Principal	Annual Interest	Annual Total	Bonds Outstanding At End of Year
1917	$	$ 5,000.00	$ 5,000.00	$ 1,400,000.00
1918		72,900.00	72,900.00	2,840,000.00
1919		141,099.99	141,099.99	10,140,000.00
1920		503,725.00	503,725.00	19,140,000.00
1921		974,870.83	974,870.83	30,700,000.00
1922	125,000.00	1,521,266.67	1,646,266.67	36,075,000.00
1923	179,750.00	1,742,150.00	1,921,900.00	38,395,250.00
1924	334,500.00	1,824,240.00	2,158,740.00	38,060,750.00
1925	3,797,000.00	1,799,267.05	5,596,267.05	37,263,750.00
1926	1,197,000.00	1,722,761.65	2,919,761.65	36,066,750.00
1927	1,600,000.00	1,663,215.87	3,263,215.87	34,466,750.00
1928	1,750,000.00	1,586,060.99	3,336,060.99	32,716,750.00
1929	1,825,000.00	1,503,578.47	3,328,578.47	30,891,750.00
1930	1,925,000.00	1,418,314.70	3,343,314.70	30,466,750.00
1931	1,975,000.00	1,386,522.18	3,361,522.18	29,491,750.00
1932	2,975,000.00	1,369,435.06	4,344,435.06	27,516,750.00
1933	1,975,000.00	1,290,992.54	3,265,992.54	27,041,750.00
1934①	2,175,000.00	1,250,010.02	3,425,010.02	25,866,750.00
1935①	5,675,000.00	1,225,541.73②	6,900,541.73	25,691,750.00
1936①	2,950,000.00	1,089,213.37	4,039,213.37	23,441,750.00
1937③	2,800,000.00	984,228.06	3,784,228.06	21,641,750.00
1938③	3,550,000.00	877,764.27	4,427,764.27	18,841,750.00
1939	2,000,000.00	776,394.23	2,776,394.23	16,841,750.00
1940	2,075,000.00	683,724.19	2,758,724.19	14,766,750.00
1941	2,150,000.00	589,085.40	2,739,085.40	12,616,750.00
1942	2,125,000.00	493,790.36	2,618,790.36	10,491,750.00
1943	2,070,250.00	399,995.32	2,470,245.32	8,421,500.00
1944	1,915,500.00	308,610.28	2,224,110.28	6,506,000.00
1945	1,453,000.00	227,913.99	1,680,913.99	5,053,000.00
1946	1,053,000.00	166,998.95	1,219,998.95	4,000,000.00
1947	650,000.00	126,765.80	776,765.80	3,350,000.00
1948	500,000.00	104,109.53	604,109.53	2,850,000.00
1949	425,000.00	86,797.01	511,797.01	2,425,000.00
1950	325,000.00	72,171.99	397,171.99	2,100,000.00
1951	275,000.00	62,046.97	337,046.97	1,825,000.00
1952	275,000.00	52,984.45	327,984.45	1,550,000.00
1953	275,000.00	43,921.93	318,921.93	1,275,000.00
1954	275,000.00	34,859.41	309,859.41	1,000,000.00
1955	275,000.00	25,796.89	300,796.89	725,000.00
1956	200,000.00	17,531.25	217,531.25	525,000.00
1957	150,000.00	12,187.50	162,187.50	375,000.00
1958	150,000.00	8,437.50	158,437.50	225,000.00
1959	150,000.00	4,687.50	154,687.50	75,000.00
1960	75,000.00	937.50	75,937.50	
	$55,650,000.00	$30,251,906.40	$85,901,906.40	
Less refunding and temporary financing bonds	11,450,000.00		11,450,000.00	
Totals①	$44,200,000.00	$30,251,906.40	$74,451,906.40	

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① Includes Coast Bridge short-term bonds.

② Includes $4,866.50 refund to cover accrued interest paid in by Ladd & Bush, Bankers, on Coast Bridge bonds.

③ Includes retirement of 1937 and 1938 short-term bonds.

Table No. 25

STATE HIGHWAY BONDS ISSUED, 1917 TO 1950

Year	Par Value of Bonds Sold		Time for Retirement	Bonds Retired Same Year
	Long-term Construction Bonds	Short-term Bonds for Temporary Financing		
1917	$ 400,000	$	8 years	$
	1,000,000		25 years	
1918	1,440,000		25 years	
1919	800,000		14 years	
	6,500,000		25 years	
1920	9,000,000		25 years	
1921		3,000,000①	4 years	
	8,560,000		25 years	
1922	5,500,000		25 years	125,000
1923	2,500,000		25 years	179,750
1924				334,500
1925	3,000,000		25 years	3,797,000
1926				1,197,000
1927				1,600,000
1928				1,750,000
1929			25 years	1,825,000
1930	1,500,000②		25 years	1,925,000
1931	1,000,000③		25 years	1,975,000
1932		1,000,000④	6 months	2,975,000
1933		1,500,000⑤	5 years	1,975,000
1934		1,000,000⑥	1 year	2,175,000
1935	3,000,000⑦		25 years	3,175,000
		1,000,000⑥	6 months	1,000,000
		1,500,000⑥	10 days	1,500,000
1936		700,000⑥	10 days	2,950,000
1937		1,000,000⑧	6 months	2,800,000⑨
1938		750,000⑧	8 months	3,550,000⑩
1939				2,000,000
1940				2,075,000
1941				2,150,000
1942				2,125,000
1943				2,070,250
1944				1,915,500
1945				1,453,000
1946				1,053,000
1947				650,000
1948				500,000
1949				425,000
1950				325,000
Totals	$44,200,000	$11,450,000		$53,550,000
Bonds retired	42,100,000	11,450,000		53,550,000
Bonds outstanding end of 1950	$ 2,100,000	$		$

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① Account of unfavorable bond market, $3,000,000 of 4-year bonds were sold with intention to refund in 1925 with long-term bonds at lower interest rate.

② This bond sale made to enable state to match available federal aid.

③ This bond sale made to finance state relief labor program.

④ This sale of 6-months bonds was made to overcome a deficit caused by change in date of licensing cars from January 1st to July 1st.

⑤ This sale of 5-year bonds was made to finance state relief program.

⑥ These sales of short-term bonds made to finance the construction of the five Oregon Coast bridges.

⑦ This sale was made to refund a like amount of Oregon Coast Bridge bonds, resulting in a saving of interest.

⑧ These sales of short-term bonds were made to enable the State to utilize its winter income in carrying on its federal aid program during the preceding summer construction season.

⑨ Includes $500,000 of 1937 short-term bonds retired December 31, 1937.

⑩ Includes $500,000 of 1937 short-term bonds retired January 31, 1938, and $750,000 of 1938 short-term bonds retired December 31, 1938.

Table No. 26

APPORTIONMENT OF MOTOR VEHICLE REVENUES TO CITIES—1944 TO 1950, INCLUSIVE

Beginning with the celandar year 1944, the cities have annually received a portion of the state highway income from motor vehicle fees, motor transportation fees, gasoline tax, and fines for traffic law violations. During the years 1944 to 1947, the cities received five (5) per cent of the state highway income, and beginning with the year 1948 they have received ten (10) per cent of the income. The apportionments are made semi-annually, on February first and August first, and are distributed in proportion to population, with the provision that a city of over 100,000 population receives an apportionment computed on two-thirds of its population. Payments are made only to incorporated cities having functioning city governments.

City	County	Total 1944 to 1948	1949	1950	Total 1944 to 1950
Adams	Umatilla	$ 1,783.78	$ 1,112.31	$ 998.86	$ 3,894.95
Albany	Linn	59,677.37	37,212.96	33,417.56	130,307.89
Amity	Yamhill	5,752.42	3,935.14	4,190.49	13,878.05
Antelope	Wasco	949.95	592.35	531.94	2,074.24
Arlington	Gilliam	6,427.93	4,008.26	3,599.45	14,035.64
Ashland	Jackson	50,072.42	31,223.61	28.039.07	109,335.10
Astoria	Clatsop	109,654.81	68,377.34	61,403.43	239,435.58
Athena	Umatilla	6,445.19	4,962.60	4,456.47	15,864.26
Aumsville	Marion	2,135.89	1,605.93	1,442.14	5,183.96
Aurora	Marion	2,500.74	1,599.36	1,436.23	5,536.33
Baker	Baker	98,603.83	61,486.29	55,215.21	215,305.33
Bandon	Coos	10,597.12	6,608.03	5,934.07	23,139.22
Banks	Washington	2,607.06	2,211.46	1,985.91	6,804.43
Barlow	Clackamas	548.85	342.25	307.34	1,198.44
Bay City	Tillamook	4,999.09	3,540.96	3,179.81	11,719.86
Beaverton	Washington	14,528.59	9,819.90	8,818.36	33,166.85
Bend	Deschutes	105,770.61	65,955.27	59,228.39	230,954.27
Boardman	Morrow	1,161.04	723.98	650.15	2,535.17
Bonanza	Klamath	2,459.30	1,533.54	1,377.13	5,369.97
Brownsville	Linn	9,644.96	6,318.43	5,674.01	21,637,40
Burns	Harney	27,083.87	16,888.65	15,166.15	59,138.67
Butte Falls	Jackson	3,578.10	2,231.20	2,003.63	7,812.93
Canby	Clackamas	12,358.58	8,134.99	7,305.28	27,798.85
Canyon City	Grant	3,293.13	2,053.49	1,844.05	7,190.67
Canyonville	Douglas	4,966.38	5,179.80	4,651.51	14,797.69
Carlton	Yamhill	9,897.80	6,344.76	5,697.66	21,940.22
Cascade Locks	Hood River	7,420.09	4,626.94	4,155.03	16,202.06
Cave Junction	Josephine	1,526.45	1,599.36	1,436.23	4,562.04
Central Point	Jackson	11,508.66	7,608.45	6,832.45	25,949.56
Chiloquin	Klamath	7,821.17	4,877.05	4,379.63	17,077.85
Clatskanie	Columbia	7,472.87	6,009.10	5,396.22	18,878.19
Coburg	Lane	4,813.04	4,304.44	3,865.42	12,982.90
Columbia City	Columbia	3,451.45	2,152.21	1,932.71	7,536.37
Condon	Gilliam	9,300.11	6,042.00	5.425.77	20,767.88
Coos Bay	Coos	55,508.19	34,613.19	31,082.94	121,204.32
Coquille	Coos	35,116.14	21,897.33	19,663.99	76,677.46
Cornelius	Washington	7,844.33	5,140.32	4,616.05	17,600.70
Corvallis	Benton	88,576.67	55,233.67	49,600.30	193,410.64
Cottage Grove	Lane	27,717.15	17,283.56	15,520.88	60,521.59
Cove	Union	3,388.11	2,112.73	1,897.25	7,398.09
Creswell	Lane	5.780.30	4,093.82	3,676.29	13,550.41
Culver	Jefferson	1,136.99	1,191.29	1,069.79	3,398.07
Dallas	Polk	37,775.98	23,555.93	21,153.42	82,485.33
Dayton	Yamhill	6,344.88	4,179.39	3,753.12	14,277.39
Dayville	Grant	1,435.46	895.11	803.82	3,134.39

Table No. 26—Continued

City	County	Total 1944 to 1948	1949	1950	Total 1944 to 1950
Delake	Lincoln			3,770.85	3,770.85
Donald	Marion	1,869.19	1,224.20	1,099.34	4,192.73
Drain	Douglas	7,964.67	6,489.56	5,827.68	20,281.91
Draperville	Linn			638.65	638.65
Dufur	Wasco	4,137.53	2,580.03	2,316.88	9,034.44
Dundee	Yamhill	2,205.97	1,375.58	1,235.27	4,816.82
Eagle Point	Jackson	3,871.42	2,968.35	2,665.60	9,505.37
Eastside	Coos	7,798.76	5,837.97	5,242.55	18,879.28
Echo	Umatilla	4,309.73	2,988.09	2,683.33	9,981.15
Elgin	Union	11,284.36	7,733.51	6,944.75	25,962.62
Elkton	Douglas		1,408.48	1,264.83	2,673.31
Empire	Coos	7,345.91	4,653.27	4,178.67	16,177.85
Enterprise	Wallowa	18,038.32	11,761.51	10,561.94	40,361.77
Estacada	Clackamas	6,696.09	4,429.49	3,977.72	15,103.30
Eugene	Lane	219,942.89	137,149.57	123,161.48	480,253.94
Fairview	Multnomah	3,219.24	3,047.33	2,736.53	9,003.10
Falls City	Polk	7,546.75	4,705.92	4,225.96	16,478.63
Florence	Lane	5,978.34	3,981.94	3,575.81	13,536.09
Forest Grove	Washington	25,848.92	16,118.60	14,474.65	56,442.17
Fossil	Wheeler	5,615.21	4,074.07	3,658.55	13,347.83
Freewater	Umatilla	10,389.07	6,851.56	6,152.75	23,393.38
Garibaldi	Tillamook	5,647.25	5,916.95	5,313.47	16,877.67
Gaston	Washington	3,514.78	2,191.71	1,968.17	7,674.66
Gates	Marion			1,301.99	1,301.99
Gearhart	Clatsop	4,628.46	4,041.17	3,629.01	12,298.64
Gervais	Marion	3,504.22	2,418.62	2,612.41	8,535.25
Gladstone	Clackamas	19,381.14	12,571.06	11,288.92	43,241.12
Glendale	Douglas	5,879.08	3,666.01	3,292.10	12,837.19
Gold Beach	Curry	4,428.92	3,744.99	3,363.03	11,536.94
Gold Hill	Jackson	6,093.58	4,199.12	3,770.85	14,063.55
Granite	Grant	907.71	566.03	508.29	1,982.03
Grants Pass	Josephine	63,624.91	39,674.51	35,628.05	138,927.47
Grass Valley	Sherman	2,153.20	1,342.66	1,205.73	4,701.59
Gresham	Multnomah	26,609.42	17,928.56	16,100.00	60,637.98
Haines	Baker	3,979.20	2,481.31	2,228.23	8,688.74
Halfway	Baker	4,390.84	2,737.99	2,458.74	9,587.57
Halsey	Linn	3,219.24	2,007.42	1,802.68	7,029.34
Hammond	Clatsop	4,454.17	2,777.48	2,494.20	9,725.85
Harrisburg	Linn	7,582.85	5,660.27	5,082.97	18,326.09
Helix	Umatilla	1,542.26	1,204.45	1,081.61	3,828.32
Heppner	Morrow	14,204.24	9,339.44	8,386.89	31,930.57
Hermiston	Umatilla	18,625.54	13,867.66	12,453.27	44,946.47
Hillsboro	Washington	39,549.18	24,661.64	22,146.37	86,357.19
Hines	Harney	7,145.67	4,455.82	4,001.36	15,602.85
Hood River	Hood River	34,620.05	21,588.00	19,386.20	75,594.25
Hubbard	Marion	4,572.22	3,297.44	2,961.13	10,830.79
Huntington	Baker	8,710.61	6,246.03	5,609.00	20,565.64
Idanha	Marion			1,369.87	1,369.87
Imbler	Union	1,921.00	1,197.87	1,075.70	4,194.57
Independence	Polk	16,318.27	10,583.38	9,503.97	36,405.62
Ione	Morrow	2,765.38	1,724.41	1,548.53	6,038.32
Island City	Union	1,868.22	1,164.96	1,046.15	4,079.33
Jacksonville	Jackson	9,602.69	6,654.10	5,975.44	22,232.23
Jefferson	Marion	5,055.80	4,547.95	4,084.10	13,687.85
John Day	Grant	9,068.41	6,331.60	5,685.84	21,085.85
Jordan Valley	Malheur	2,892.04	1,803.39	1,619.46	6,314.89
Joseph	Wallowa	6,259.05	3,902.95	3,504.88	13,666.88
Junction City	Lane	13,960.90	9,313.11	8,363.25	31,637.26
Juntura	Malheur	1,299.89	1,099.15	987.04	3,386.08
Klamath Falls	Klamath	174,124.09	108,578.39	97,504.31	380,206.79
Lafayette	Yamhill	5,492.30	3,685.76	3,309.84	12,487.90
La Grande	Union	81,768.76	50,988.47	45,788.08	178,545.31

Table No. 26—Continued

City	County	Total 1944 to 1948	1949	1950	Total 1944 to 1950
Lakeview	Lake	26,028.38	16,230.48	14,575.12	56,833.98
Lebanon	Linn	28,804.31	17,961.48	16,129.57	62,895.36
Lexington	Morrow	2,353.75	1,467.73	1,318.03	5,139.51
Lonerock	Gilliam	485.53	302.76	271.88	1,060.17
Long Creek	Grant	2,512.07	1,566.44	1,406.68	5,485.19
Lostine	Wallowa	2,153.20	1,342.66	1,205.73	4,701.59
Madras	Jefferson	6,754.51	5,232.45	4,698.79	16,685.75
Malin	Klamath	5,646.87	3,521.21	3,162.08	12,330.16
Manzanita	Tillamook	1,375.69	1,441.39	1,294.39	4,111.47
Maupin	Wasco	2,818.16	1,757.31	1,578.08	6,153.55
McMinnville	Yamhill	39,116.43	24,391.79	21,904.04	85,412.26
Medford	Jackson	119,069.76	74,248.22	66,675.52	259,993.50
Merrill	Klamath	6,839.57	4,264.95	3,829.96	14,934.48
Metolius	Jefferson	....	....	236.42	236.42
Mill City	Linn	5,229.65	8,049.42	7,228.45	20,507.52
Milton	Umatilla	19,225.02	12,169.58	10,928.37	42,322.97
Milwaukie	Clackamas	45,239.88	33,869.46	30,415.05	109,524.39
Mitchell	Wheeler	2,311.53	1,441.39	1,294.39	5,047.31
Molalla	Clackamas	12,134.13	8,134.99	7,305.28	27,574.40
Monmouth	Polk	11,018.33	7,055.59	6,335.98	24,409.90
Monroe	Benton	3,282.57	2,046.91	1,838.14	7,167.62
Monument	Grant	741.24	776.65	697.43	2,215.32
Moro	Sherman	3,261.46	2,033.75	1,826.32	7,121.53
Mosier	Wasco	2,279.84	1,421.65	1,276.65	4,978.14
Mt. Angel	Marion	12,815.23	8,418.00	7,559.43	28,792.66
Mt. Vernon	Grant	....	2,942.02	2,641.96	5,583.98
Myrtle Creek	Douglas	6,369.63	4,699.34	4,220.04	15,289.01
Myrtle Point	Coos	15,034.67	10,616.29	9,533.52	35,184.48
Nehalem	Tillamook	2,607.06	1,915.28	1,719.94	6,242.28
Newberg	Yamhill	31,242.48	19,481.84	17,494.87	68,219.19
Newport	Lincoln	21,310.34	13,288.46	11,933.15	46,531.95
North Bend	Coos	44,984.96	28,051.23	25,190.24	98,226.43
North Powder	Union	3,968.64	2,474.72	2,222.32	8,665.68
Nyssa	Malheur	22,115.05	16,112.02	14,468.72	52,695.79
Oakland	Douglas	5,293.31	3,902.95	3,504.88	12,701.14
Oakridge	Lane	7,502.58	6,522.47	5,857.23	19,882.28
Ocean Lake	Lincoln	4,335.53	3,666.01	3,292.10	11,293.64
Ontario	Malheur	37,480.43	23,371.63	20,987.93	81,839.99
Oregon City	Clackamas	64,638.18	40,306.36	36,195.45	141,139.99
Oswego	Clackamas	23,814.24	16,092.27	14,450.99	54,357.50
Paisley	Lake	2,501.51	1,559.86	1,400.77	5,462.14
Pendleton	Umatilla	93,379.15	58,228.34	52,289.55	203,897.04
Philomath	Benton	9,190.66	5,765.57	5,177.53	20,133.76
Phoenix	Jackson	5,872.59	4,218.87	3,788.59	13,880.05
Pilot Rock	Umatilla	4,712.69	3,146.06	2,825.19	10,683.94
Portland	Multnomah	2,148,934.30	1,340,008.83	1,203,339.32	4,692,282.45
Port Orford	Curry	7,968.94	4,969.18	4,462.37	17,400.49
Powers	Coos	5,931.19	5,015.25	4,503.75	15,450.19
Prairie City	Grant	7,168.23	4,613.77	4,143.21	15,925.21
Prescott	Columbia	....	1,007.00	904.30	1,911.30
Prineville	Crook	24,888.44	15,519.66	13,936.78	54,344.88
Rainier	Columbia	12,486.44	7,786.16	6,992.03	27,264.63
Redmond	Deschutes	22,042.69	14,242.81	12,790.16	49,075.66
Reedsport	Douglas	19,341.81	13,025.19	11,696.73	44,063.73
Richland	Baker	2,680.95	1,671.76	1,501.25	5,853.96
Riddle	Douglas	4,003.40	4,093.82	3,676.69	11,773.51
Rockaway	Tillamook	7,938.58	6,265.78	5,626.72	19,831.08
Rogue River	Jackson	4,614.16	3,119.73	2,801.55	10,535.44
Roseburg	Douglas	51,972.31	32,408.32	29,102.94	113,483.57
St. Helens	Columbia	45,428.26	28,327.66	25,438.48	99,194.40
St. Paul	Marion	1,931.55	1,204.45	1,081.61	4,217.61
Salem	Marion	345,192.55	216,623.66	194,529.89	756,346.10

Table No. 26—Continued

City	County	Total 1944 to 1948	1949	1950	Total 1944 to 1950
Sandy	Clackamas	6,448.03	4,343.92	2,900.88	14,692.83
Scappoose	Columbia	4,838.54	3,304.02	2,967.03	11,109.59
Scio	Linn	4,076.80	2,882.79	2,588.77	9,548.36
Scotts Mills	Marion	2,395.96	1,494.05	1,341.67	5,231.68
Seaside	Clatsop	30,630.29	19,100.11	17,152.06	66,882.46
Shaniko	Wasco	580.52	362.00	325.07	1,267.59
Sheridan	Yamhill	15,292.62	9,898.89	8,889.28	34,080.79
Sherwood	Washington	5,620.95	3,705.50	3,327.57	12,654.02
Siletz	Lincoln	2,488.68	3,830.55	3,439.87	9,759.10
Silver Lake	Lake	133.22			133.22
Silverton	Marion	30,873.06	19,251.49	17,288.00	67,412.55
Sisters	Deschutes	4,120.79	4,317.60	3,877.24	12,315.63
Sodaville	Linn	1,044.94	651.58	585.13	2,281.65
Springfield	Lane	40,161.38	25,043.39	22,489.17	87,693.94
Stanfield	Umatilla	5,073.44	3,725.24	3,345.30	12,143.98
Stayton	Marion	12,598.05	8,905.04	7,996.80	29,499.89
Sublimity	Marion	2,955.36	1,842.88	1,654.92	6,453.16
Summerville	Union	844.39	526.53	472.83	1,843.75
Sumpter	Baker	4,433.05	2,764.32	2,482.38	9,679.75
Sutherlin	Douglas	11,573.69	8,556.22	7,683.55	27,813.46
Sweet Home	Linn	19,685.50	14,091.43	12,654.23	46,431.16
Taft	Lincoln			2,890.19	2,890.19
Talent	Jackson	4,021.42	4,712.50	4,231.86	12,965.78
The Dalles	Wasco	66,136.98	41,240.96	37,034.73	144,412.67
Tillamook	Tillamook	29,036.51	18,106.28	16,259.58	63,402.37
Toledo	Lincoln	24,149.61	15,058.94	13,523.05	52,731.60
Troutdale	Multnomah	2,227.06	2,082.86	3,179.81	7,489.73
Tualatin	Washington	2,351.34	1,566.45	1,406.68	5,324.47
Turner	Marion	4,968.37	3,646.27	3,274.38	11,889.02
Umatilla	Umatilla	3,905.31	3,226.98	4,391.45	11,523.74
Union	Union	14,755.74	9,201.22	8,262.78	32,219.74
Vale	Malheur	12,675.29	9,043.26	8,120.92	29,839.47
Vernonia	Columbia	14,953.76	9,346.02	8,392.81	32,692.59
Waldport	Lincoln	6,649.58	4,146.47	3,723.57	14,519.62
Wallowa	Wallowa	8,845.00	6,529.05	5,863.14	21,237.19
Warrenton	Clatsop	17,868.65	12,610.55	11,324.38	41,803.58
Wasco	Sherman	3,198.13	1,994.26	1,790.86	6,983.25
West Linn	Clackamas	22,851.35	14,249.39	12,796.07	49,896.81
Weston	Umatilla	5,256.34	4,640.10	4,166.85	14,063.29
Wheeler	Tillamook	2,733.71	1,704.66	1,530.80	5,969.17
Willamina	Yamhill	8,772.46	5,831.39	5,236.63	19,840.48
Woodburn	Marion	22,616.65	14,479.75	13,002.94	50,099.34
Yamhill	Yamhill	4,411.95	2,751.16	2,470.56	9,633.67
Yoncalla	Douglas	3,709.85	2,487.89	2,234.14	8,431.88
Total amounts disbursed		$5,839,203.69	$3,733,624.45	$3,366,934.59	$12,939,762.73
Amounts withheld*		250,000.00	375,000.00	250,000.00	875,000.00
Total of apportionment		$6,089,203.69	$4,108,624.45	$3,616,934.59	$13,814.762.73

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* The 1947 law provided for the withholding of $250,000 annually from the cities' share of highway income to be expended by the State Highway Commission upon streets not a part of the state highway system which are receiving excessive wear through increased or unusual use.

Table No. 27

CITY ALLOTMENT PROJECT EXPENDITURES

In this table are given the amounts expended for projects upon city streets not a part of the state highway system which are receiving excessive wear through increased or unusual use. Beginning with 1948 an amount of $250,000 has been withheld annually from the cities' share of motor vehicle revenues for financing these projects.

City	1948 Total Expended	1948 Contributed By City	1949 Total Expended	1949 Contributed By City
Bandon	$ 919.21	$	$	$
Beaverton	6,507.38			
Brownsville	20,090.80		9.31	5,748.49
Burns	5,001.92		2,590.24	
Central Point	11,992.40			
Chiloquin				
Coquille			4,870.44	
Cornelius	1,010.55			
Dallas	11,221.31		9,542.98	3,000.00
Drain			8,211.55	
Dufur	5,273.55		19.23	
Florence	9,392.40			
Freewater	535.23		25,340.86	1,104.85
Garibaldi	3,613.06			255.30
Gladstone			9,893.34	
Gold Beach			19,513.28	11,007.80
Gresham			3,739.39	
Harrisburg			11,851.78	1,825.50
Hillsboro				
Hood River			4,586.83	
Independence	15,045.95		782.08	3,081.27
Ione			463.17	
Lakeview	13.00		14,015.11	
Lebanon			39,062.06	
Milton	66.90		4.267.33	
Mosier			3,026.22	
Myrtle Creek			344.64	
Myrtle Point	14,415.10			
Newport	10,219.51			
North Powder				
Oakland	757.83			
Oakridge	925.48		13,923.06	
Ontario	4,456.81			
Paisley				
Phoenix				
Powers	7,460.87			
Prairie City			12,419.87	
Redmond			12,549.83	
Reedsport	1,484.40			
Riddle	12,789.89			
Rogue River			10,732.62	
Scapoose			8,099.65	
Seaside				
Siletz	1,701.09			
Silverton				
Sweet Home	30,614.78		8,809.99	7,677.43
Tillamook	8,324.41		20.597.07	
Toledo			6,639.90	4,800.00
Vale			9,542.89	
Waldport			6,441.11	
West Salem	33,253.75		1,741.41	16,054.47
Willamina			10,383.44	3,500.00
Yoncalla			8,163.73	
Total allotment funds	$ 217,087.58	$	$ 292,174.40	
Contributed by cities			58,055.11	$ 58,055.11
Net expended from allotment funds	$ 217,087.58	$	$ 234,119.29	

Table No. 28

APPORTIONMENT OF MOTOR VEHICLE FEES TO COUNTIES

1920 to 1950, Inclusive

Prior to 1917, the total net revenues from motor vehicle license fees were reverted to counties; from 1917 to 1919, inclusive, the entire net fees were reverted to the state highway fund; from 1920 to January 1, 1930, inclusive, one-quarter of the net fees were apportioned to the counties, and three-quarters to the state highway fund; and from January 1, 1930, to June 30, 1933, one-third of the net fees were apportioned to the counties and two-thirds to the state highway fund. The net revenues from motor transportation fees, from the beginning of the act authorizing the collection of such fees in 1927, to June 30, 1933, were apportioned to the counties and three-quarters to state highway fund. Subsequent to June 30, 1933, the entire net revenues from both sources were deposited into the state highway fund. During the four-year period from 1933 to 1936, the counties received $1,600,000 yearly. During the ten-year period from 1937 to 1946 the yearly apportionment was increased to 15.7 per cent of the total state highway income, but to be not less than $2,000,000. Beginning with the year 1947, the yearly apportionment was again increased to 19 per cent of the total state highway income. This table gives total apportionments to the end of the calendar year 1950.

County	Total Apportionment 1920 to 1948	Apportionment Calendar Year 1949	Apportionment Calendar Year 1950	Total Apportionment 1920 to 1950
Baker	$ 823,251.37	$ 67,659.17	$ 87,621.26	$ 978,531.80
Benton	1,070,248.02	106,017.06	143,831.24	1,320,096.32
Clackamas	2,807,058.52	290,710.40	384,038.73	3,481,807.65
Clatsop	1,201,801.10	107,060.00	143,078.95	1,451,940.05
Columbia	979,360.78	88,333.51	113,628.95	1,181,323.24
Coos	1,567,620.53	149,169.91	206,176.04	1,922,966.48
Crook	247,106.78	31,340.41	45,234.60	323,681.79
Curry	203,999.25	23,052.54	32,909.98	259,961.77
Deschutes	959,976.16	87,098.79	117,219.90	1,164,294.85
Douglas	1,424,573.64	187,509.60	269,849.48	1,881,932.72
Gilliam	194,512.05	14,094.66	19,752.52	228,359.23
Grant	311,808.54	31,799.48	44,502.14	388,110.16
Harney	271,778.34	25,590.43	36,118.93	333,487.70
Hood River	643,889.05	54,397.30	70,340.28	768,626.63
Jackson	2,269,339.32	238,785.62	322,191.38	2,830,316.32
Jefferson	123,362.72	16,519.28	26,934.88	166,816.88
Josephine	857,683.24	109,656.59	145,309.44	1,112,649.27
Klamath	2,050,833.40	185,505.92	241,285.88	2,477,625.20
Lake	329,949.83	31,436.00	41,949.35	403,335.18
Lane	3,576,998.33	439,976.07	612,155.50	4,629,129.90
Lincoln	570,432.99	77,503.06	103,527.52	751,463.57
Linn	1,722,019.78	204,632.64	278,669.42	2,205,321.84
Malheur	755,029.58	96,951.58	125,321.05	977,302.21
Marion	3,867,696.40	356,038.01	475,163.74	4,698,898.15
Morrow	274,546.50	23,275.95	32,554.73	330,377.18
Multnomah	20,453,679.18	1,631,169.80	2,127,271.50	24,212,120.48
Polk	940,925.00	94,878.85	121,807.80	7,157,611.65
Sherman	200,485.83	14,304.26	19,821.55	234,611.64
Tillamook	735,120.98	73,311.94	100,144.45	908,577.37
Umatilla	1,678,960.90	162,281.99	228,100.46	2,069,343.35
Union	937,233.08	74,447.31	96,851.66	1,108,532.05
Wallowa	346,444.66	32,088.94	43,172.48	421,706.08
Wasco	771,600.61	61,081.75	83,618.69	916,301.05
Washington	2,043,267.55	218,322.12	295,020.39	2,556,610.06
Wheeler	136,613.70	11,317.79	15,832.87	163,764.36
Yamhill	1,446,606.44	140,556.78	185,597.51	1,772,760.73
Totals	$58,795,814.15	$ 5,557,875.51	$ 7,436,605.25	$71,790,294.91

Table No. 29

MILEAGES OF PRIMARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

			Miles of Different Types of Improvement							
Hwy. No.	Highway	Total Mileage of Highway	Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
1	Pacific	225.39	69.41	118.42	37.56	—	—	—	—
1E	Pacific, East	111.11	45.87	56.33	8.91	—	—	—	—
1W	Pacific, West	115.94	49.58	37.00	29.36	—	—	—	—
2	Columbia River	310.08	25.73	131.98	105.20	47.17	—	—	—
3	Oswego	11.55	7.07	4.48	—	—	—	—	—
4	The Dalles-California	293.09	2.46	5.78	64.09	220.76	—	—	—
5	John Day	278.50	—	—	39.53	238.97	—	—	—
6	Old Oregon Trail	238.05	2.74	13.07	170.23	52.01	—	—	—
7	Central Oregon	258.59	0.04	0.27	58.94	199.34	—	—	—
8	Oregon-Washington	35.31	—	7.75	27.56	—	—	—	—
9	Oregon Coast	381.97	24.36	35.63	132.45	187.35	—	—	2.18
10	Wallowa Lake	71.43	0.24	2.94	12.50	55.75	—	—	—
11	Enterprise-Lewiston	45.01	—	—	—	23.14	21.87	—	—
12	Baker-Homestead	80.53	—	0.33	—	48.41	3.90	—	27.89
13	Baker-Unity	46.41	—	0.42	—	30.08	1.74	14.17	—
14	Crooked River	42.54	—	—	—	0.19	—	42.35	—
15	McKenzie	111.55	0.25	0.46	33.25	77.59	—	—	—
16	Santiam	100.82	—	22.06	26.45	52.31	—	—	—
17	McKenzie-Bend	20.07	—	—	—	20.07	—	—	—
18	Willamette	86.33	—	—	28.54	57.79	—	—	—
19	Fremont	158.17	—	—	51.23	106.94	—	—	—
20	Klamath Falls-Lakeview	95.81	2.25	2.83	42.37	48.36	—	—	—
21	Green Springs	59.08	—	5.69	33.86	19.53	—	—	—
22	Crater Lake	86.70	15.02	7.64	36.38	27.66	—	—	—
23	Dairy-Bonanza	6.97	—	—	—	6.97	—	—	—
24	Burns-Crane	28.91	—	—	—	28.91	—	—	—
25	Redwood	42.51	0.11	13.20	10.83	18.37	—	—	—
26	Mt. Hood	102.27	11.54	13.70	34.00	43.03	—	—	—
27	Alsea	59.11	—	—	3.19	49.61	6.31	—	—
28	Pendleton-John Day	122.29	—	1.62	31.35	79.35	3.20	—	6.77
29	Tualatin Valley	42.28	20.18	22.10	—	—	—	—	—
30	Salem-Dallas	15.53	0.16	9.52	5.85	—	—	—	—
31	Albany-Corvallis	11.12	10.26	0.86	—	—	—	—	—
32	Three Rivers	24.74	—	—	4.41	20.33	—	—	—
33	Corvallis-Newport	56.90	0.45	0.12	27.67	28.66	—	—	—
34	Siuslaw	67.45	—	—	15.98	51.47	—	—	—
35	Coos Bay-Roseburg	61.81	0.11	0.31	9.01	52.38	—	—	—
36	Pendleton-Cold Springs	30.88	—	—	5.22	25.15	0.51	—	—
37	Wilson River	54.32	1.70	18.94	3.86	17.00	—	—	12.82
38	Oregon Caves	19.70	—	—	—	19.70	—	—	—
39	Salmon River	44.82	7.23	12.82	24.77	—	—	—	—
40	Beaverton-Hillsdale	6.72	3.67	3.05	—	—	—	—	—
41	Ochoco	98.53	—	—	1.63	78.75	18.15	—	—
42	Sherman	68.85	—	—	15.86	52.99	—	—	—
43	Monmouth-Independence	2.35	—	2.35	—	—	—	—	—
44	Wapinitia	40.00	—	1.00	23.03	15.97	—	—	—
45	Umpqua	50.13	0.59	—	33.52	16.02	—	—	—
46	Necanicum	22.09	—	—	9.22	12.87	—	—	—
47	Sunset	74.83	3.77	15.02	35.97	20.07	—	—	—
48	John Day-Burns	68.11	—	—	18.63	36.92	12.56	—	—
49	Lakeview-Burns	90.10	—	—	—	90.10	—	—	—
50	Klamath Falls-Malin	29.03	0.22	—	19.96	8.85	—	—	—
51	West Portland-Hubbard	17.16	4.50	3.41	—	0.04	—	—	9.21
52	Heppner	84.37	—	—	—	63.13	21.24	—	—
53	Warm Springs	46.30	0.14	—	6.86	39.30	—	—	—
54	Boardman-Stanfield	25.55	—	—	25.55	—	—	—	—
55	Halfway	11.15	—	—	—	11.15	—	—	—
56	Sullivan Gulch	13.97	—	—	—	—	—	—	13.97
	Totals	4,804.88	309.65	571.10	1,304.78	2,400.51	89.48	56.52	72.84

Table No. 30

MILEAGES OF PRIMARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	230.31	0.98	1.66	57.52	122.45	5.64	14.17	27.89
Benton	94.86	17.73	11.33	23.37	42.43	....	....	....
Clackamas	78.62	26.60	7.18	36.94	2.90	....	....	5.00
Clatsop	109.63	17.29	31.25	43.10	17.99	....	....	....
Columbia	55.96	3.82	47.70	3.63	0.81	....	....	....
Coos	102.10	16.21	7.25	24.96	53.68	....	....	....
Crook	84.79	....	....	1.63	29.74	15.14	38.28	....
Curry	90.12	0.37	0.37	12.15	77.23	....	....	....
Deschutes	204.32	0.52	3.49	47.33	148.91	....	4.07	....
Douglas	198.44	30.65	59.68	43.81	64.30	....	....	....
Gilliam	97.21	0.05	....	18.69	78.47	....	....	....
Grant	195.97	....	....	22.08	155.82	11.30	....	6.77
Harney	185.85	....	....	49.49	131.90	4.46	....	....
Hood River	69.22	0.53	23.36	5.20	40.13	....	....	....
Jackson	147.98	24.88	43.96	60.59	18.55	....	....	....
Jefferson	69.98	....	....	21.96	48.02	....	....	....
Josephine	93.76	6.20	23.38	26.11	38.07	....	....	....
Klamath	312.01	4.45	5.39	122.69	179.48	....	....	....
Lake	244.71	....	....	51.23	193.48	....	....	....
Lane	286.12	29.42	21.52	66.65	168.53	....	....	....
Lincoln	135.47	1.23	7.50	68.07	52.36	6.31	....	....
Linn	117.24	11.47	37.67	21.47	46.63	....	....	....
Malheur	182.39	1.60	7.51	60.02	113.26	....	....	....
Marion	45.68	18.77	26.87	....	0.04	....	....	....
Morrow	107.44	....	....	15.52	81.13	10.79	....	....
Multnomah	128.12	32.35	54.80	27.00	....	....	....	13.97
Polk	57.85	5.68	18.34	32.72	1.11	....	....	....
Sherman	63.92	0.04	....	30.69	33.19	....	....	....
Tillamook	131.39	3.82	26.23	51.69	47.47	....	....	2.18
Umatilla	245.98	0.16	11.31	145.64	77.91	10.96	....	....
Union	83.97	0.24	4.70	37.93	41.10	....	....	....
Wallowa	83.44	....	0.95	7.72	52.90	21.87	....	....
Wasco	189.81	0.14	20.00	44.61	125.06	....	....	....
Washington	107.23	15.86	50.23	18.24	5.87	....	....	17.03
Wheeler	99.87	....	....	....	96.86	3.01	....	....
Yamhill	73.12	38.59	17.47	4.33	12.73	....	....	....
Totals	4,804.88	309.65	571.10	1,304.78	2,400.51	89.48	56.52	72.84

Table No. 31

MILEAGES OF SECONDARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
102	Nehalem	85.66	10.97	5.81	15.85	53.03	—	—	—
103	Fishhawk Falls	5.86	—	—	—	—	—	—	5.86
104	Fort Stevens	4.53	2.47	1.20	0.86	—	—	—	—
105	Warrenton	1.62	—	1.62	—	—	—	—	—
110	Mist-Clatskanie	11.90	—	—	—	11.90	—	—	—
120	Swift	2.94	2.09	0.85	—	—	—	—	—
122	Vancouver Avenue	0.50	0.50	—	—	—	—	—	—
123	Northeast Portland	5.10	4.17	0.93	—	—	—	—	—
124	Sun Dial	0.36	—	0.36	—	—	—	—	—
125	Crown Point	23.93	—	23.93	—	—	—	—	—
130	Little Nestucca	9.54	—	—	—	—	3.94	3.08	2.52
131	Netarts	9.15	1.56	0.10	—	7.49	—	—	—
140	Hillsboro-Silverton	52.39	0.35	32.42	—	19.62	—	—	—
141	Beaverton-Aurora	20.81	0.39	2.94	—	17.33	—	—	0.15
142	Farmington	9.89	—	—	—	9.89	—	—	—
143	Scholls	12.40	—	—	—	12.40	—	—	—
150	Salem-Dayton	20.10	0.03	—	—	20.07	—	—	—
151	Yamhill-Newberg	11.65	0.80	0.58	—	10.27	—	—	—
152	Three Mile Lane	8.26	7.14	1.12	—	—	—	—	—
153	Bellevue-Hopewell	14.89	—	—	—	14.89	—	—	—
154	Lafayette	5.75	—	—	—	5.75	—	—	—
155	Amity-Dayton	7.03	—	—	—	7.03	—	—	—
156	McMinnville	1.80	1.05	0.75	—	—	—	—	—
160	Cascade	44.61	5.93	16.69	—	21.99	—	—	—
161	Woodburn-Estacada	34.19	0.62	1.52	4.85	27.20	—	—	—
162	North Santiam	77.76	—	15.46	7.30	47.39	—	—	7.61
163	Silver Creek Falls	40.82	—	12.49	—	28.33	—	—	—
164	Jefferson	8.45	1.19	6.85	0.41	—	—	—	—
170	Canby-Marquam	8.02	0.22	—	—	7.80	—	—	—
171	Clackamas	24.68	—	23.08	—	1.60	—	—	—
172	Eagle Creek-Sandy	5.94	0.03	—	—	5.91	—	—	—
173	Timberline	5.60	—	—	—	5.60	—	—	—
180	Eddyville-Blodgett	19.29	—	—	—	13.60	5.69	—	—
181	Siletz	31.73	—	—	5.55	7.78	18.40	—	—
182	Otter Rock	0.45	—	—	—	0.45	—	—	—
191	Kings Valley	28.17	0.04	0.43	6.05	19.79	1.86	—	—
192	Dallas-Coast	14.83	—	—	4.13	10.70	—	—	—
193	Independence	6.38	0.06	3.32	—	3.00	—	—	—
194	Monmouth	7.20	—	—	—	6.75	0.45	—	—
200	Territorial	45.99	—	—	3.33	16.97	25.69	—	—
201	Alsea-Deadwood	27.34	—	—	—	—	27.34	—	—
202	Tampico-Lewisville	5.59	—	—	—	—	5.59	—	—
210	Corvallis-Eastside	10.19	—	0.28	—	9.91	—	—	—
211	Albany-Lyons	24.68	0.04	6.16	11.42	4.73	2.33	—	—
212	Halsey-Sweet Home	21.51	—	4.00	—	17.51	—	—	—
213	Mehama-Mill City	8.70	—	—	—	8.70	—	—	—
214	Albany Airport	1.07	—	—	—	1.07	—	—	—
220	Richardson-Eugene	37.03	—	5.98	5.09	6.81	19.15	—	—
221	Fox Hollow	15.50	1.13	—	—	—	5.87	—	8.50
222	Springfield-Creswell	15.81	—	—	—	6.42	9.39	—	—
223	Junction City-Eugene	13.52	0.70	12.82	—	—	—	—	—
224	W.-7th-W.-11th St.	0.38	—	—	—	—	—	—	0.38
230	Tiller Trail	49.35	—	—	—	41.84	6.94	—	0.57
231	Elkton-Sutherlin	28.95	—	0.10	—	7.37	21.48	—	—
232	Crater Lake North	5.29	—	—	—	5.29	—	—	—
233	West Diamond Lake	23.89	—	—	—	23.89	—	—	—
240	Cape Arago	14.25	0.34	0.22	—	10.57	3.12	—	—
241	Coos River	18.86	0.59	—	—	5.33	7.74	—	5.20
242	Powers	18.62	0.15	—	—	18.47	—	—	—
243	Empire-Coos Bay	3,55	—	0.72	—	2.83	—	—	—
250	Cape Blanco	5.54	—	—	—	—	4.50	—	1.04
251	Port Orford	0.79	—	—	—	—	0.79	—	—
260	Rogue River Loop	22.42	—	0.12	—	22.30	—	—	—
261	Williams	23.13	—	—	—	23.13	—	—	—

Table No. 31—Continued

			Miles of Different Types of Improvement						
Hwy. No.	Highway	Total Mileage of Highway	Concrete Pavement	Bitu-minous Pavement	Bitu-minous Macadam	Oiled Surfacing	Unoiled Sur-facing	Graded Only	Unim-proved
270	Little Butte	30.33				14.13		0.35	15.85
271	Sams Valley	15.74				15.74			
272	Medford-Provolt	25.42		9.54		15.88			
273	Siskiyou	7.61		7.61					
281	Hood River	17.25	2.43		1.95	12.87			
282	Odell	3.48	0.84			2.59			
290	Sherars Bridge	28.64				12.16	14.14	2.34	
291	Shaniko-Fossil	43.65				0.60	22.99	11.15	8.91
300	Wasco-Heppner	88.88				48.95	13.73	5.78	20.42
301	Fulton Canyon	1.28				1.28			
320	Lexington-Echo	39.32				39.32			
321	Heppner Spray	40.96				14.78	26.18		
330	Weston-Elgin	41.39		0.10		41.29			
332	Sunnyside-Umapine	7.25				7.25			
333	Hermiston	17.86			0.97	16.89			
334	Athena-Holdman	16.23		0.19		16.04			
335	Havana-Helix	8.96	0.05			8.91			
336	Pendleton Airport	1.36			1.36				
337	Stanfield-Pendleton	24.65				24.65			
338	Ordnance Depot	0.41			0.41				
339	Freewater	5.46		5.46					
340	Medical Springs	42.53				42.53			
341	Starkey	16.61					12.46	2.60	1.55
342	Cove	22.16				22.16			
350	Little Sheep Creek	30.42				3.17	5.05	22.20	
351	Joseph-Wallowa Lake	6.22				6.06	0.16		
360	Madras-Prineville	26.39				26.39			
361	Culver	11.64				11.64			
370	O'Neill	17.71				9.14	8.57		
371	Powell Butte	18.21				12.57	5.01	0.63	
372	Century Drive	11.65		0.58		11.07			
373	Cline Falls	10.06				10.06			
374	Tumalo-Deschutes	3.85				3.85			
375	Redmond-Bend	13.53				13.53			
380	Paulina	56.20					38.10	18.10	
390	Service Creek-Mitchell	24.85					13.87	0.76	10.22
401	Beech Creek	5.35				5.35			
402	Kimberly-Long Creek	35.09				21.54	13.55		
410	Sumpter Valley	22.73				4.04	15.55		3.14
411	Haines-Anthony	12.60					11.70		0.90
413	Halfway-Cornucopia	11.45				5.75	5.70		
414	Pine Creek	3.72					3.72		
420	Midland	5.87			2.14		3.73		
421	Klamath Lake	50.21		0.61	0.07	7.98	7.20	6.94	27.41
422	Chiloquin	9.77			9.77				
423	Lower Klamath	7.02				7.02			
424	Sand Creek	4.23			4.23				
425	East Diamond Lake	14.72				14.72			
426	Hatfield	2.51				2.51			
427	Modoc Point	12.90				12.90			
428	Sun Mountain	26.98				26.98			
431	Warner	45.97				21.20		13.70	11.07
440	Frenchglen	62.00					12.10		49.90
441	Diamond Valley	36.18				7.97	6.38	21.83	
442	Rome-Princeton	61.71				41.34		20.36	
450	Nyssa-Adrian	22.54				22.54			
451	Vale-West	10.72				10.72			
452	Adrian-Parma	2.77				2.77			
453	Adrian-Arena Valley	3.19				2.26	0.93		
454	Adrian-Caldwell	5.09				2.85	2.24		
456	I. O. N.	118.13				111.27			6.86
458	Jordan Valley	10.43				10.43			
	Totals	2,508.12	45.88	206.94	85.74	1,438.35	413.33	129.82	188.06

Table No. 32

MILEAGES OF SECONDARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	70.13	....	....	....	29.42	36.67	....	4.04
Benton	31.85	0.04	0.13	6.05	12.66	12.97	....	....
Clackamas	113.45	4.14	32.30	4.85	72.01	....	....	0.15
Clatsop	49.84	13.44	7.09	0.86	22.59	....	....	5.86
Columbia	42.05	....	0.78	8.35	32.92	....	....	....
Coos	55.28	1.08	0.94	....	37.20	10.86	....	5.20
Crook	87.86	....	....	....	18.08	51.68	18.10	....
Curry	6.33	....	....	....	....	5.29	....	1.04
Deschutes	53.44	....	0.58	....	52.23	....	0.63	....
Douglas	97.17	....	0.10	....	63.70	33.37	....	....
Gilliam	41.00	....	....	....	19.68	4.83	5.78	10.71
Grant	40.44	....	....	....	26.89	13.55	....	....
Harney	122.48	....	....	....	11.91	18.48	42.19	49.90
Hood River	20.68	3.27	....	1.95	15.46	....	....	....
Jackson	95.68	....	17.15	....	61.76	....	0.35	16.42
Jefferson	27.94	....	....	....	27.94	....	....	....
Josephine	45.55	....	0.12	....	45.43	....	....	....
Klamath	132.89	....	0.61	16.21	70.79	10.93	6.94	27.41
Lake	45.97	....	....	....	21.20	....	13.70	11.07
Lane	141.19	1.83	18.80	8.42	28.15	75.11	....	8.88
Lincoln	44.71	....	....	5.55	15.07	24.09	....	....
Linn	88.60	0.24	11.98	11.83	62.22	2.33	....	....
Malheur	210.28	....	....	....	200.25	3.17	....	6.86
Marion	145.28	1.24	71.07	7.30	58.06	....	....	7.61
Morrow	73.90	....	....	....	63.93	9.97	....	....
Multnomah	39.82	9.56	29.76	....	0.50	....	....	....
Polk	56.24	0.06	3.75	4.13	45.99	2.31	....	....
Sherman	40.23	....	....	....	5.14	23.04	2.34	9.71
Tillamook	18.69	1.56	0.10	....	7.49	3.94	3.08	2.52
Umatilla	123.22	0.05	5.75	2.74	114.68	....	....	....
Union	81.46	....	....	....	64.85	12.46	2.60	1.55
Wallowa	36.64	....	....	....	9.23	5.21	22.20	....
Wasco	31.62	....	....	....	8.30	17.84	5.48	....
Washington	68.09	0.35	1.54	7.50	58.70	....	....	....
Wheeler	61.39	....	....	....	0.60	35.23	6.43	19.13
Yamhill	66.73	9.02	4.39	....	53.32	....	....	....
Totals	2,508.12	45.88	206.94	85.74	1,438.35	413.33	129.82	188.06

Table No. 33

MILEAGES OF COUNTY ROADS

County road mileages are segregated in this table by counties and by types of improvement. Mileages of roads within National Forests, National Parks, Indian Reservations, State Forests, State Parks and Military Reservations, and Mileages of City Streets not on the state highway system are segregated by types of improvement only. The data have been compiled from mileages reported by the State-wide Highway Planning Survey.

		Miles of Different Types of Improvement				
County	Total Mileage in County	Concrete Pavement	Bituminous Surfacing	Rock Surfacing	Graded Only	Unimproved
Baker	1,436	....	....	388	791	257
Benton	412	....	44	347	2	19
Clackamas	1,585	61	211	978	135	200
Clatsop	278	....	97	146	30	5
Columbia	604	1	99	432	45	27
Coos	685	....	41	464	123	57
Crook	752	....	....	52	....	700
Curry	96	....	....	29	59	8
Deschutes	1,320	....	64	64	460	732
Douglas	930	15	87	813	....	15
Gilliam	800	....	4	115	681	....
Grant	464	....	....	39	105	320
Harney	1,897	....	....	80	476	1,341
Hood River	211	....	21	125	10	55
Jackson	928	7	154	554	122	91
Jefferson	676	....	12	348	167	149
Josephine	529	....	21	432	66	10
Klamath	779	....	89	423	51	216
Lake	1,542	....	....	193	2	1,347
Lane	1,394	3	210	1,052	....	129
Lincoln	420	....	18	124	155	123
Linn	1,208	....	133	963	87	25
Malheur	1,946	....	....	149	42	1,755
Marion	1,099	16	297	743	34	9
Morrow	1,207	....	8	290	521	388
Multnomah	999	16	458	481	24	20
Polk	507	7	69	421	1	9
Sherman	519	....	8	232	220	59
Tillamook	267	....	59	175	....	33
Umatilla	2,857	....	136	1,405	500	816
Union	592	....	20	239	244	89
Wallowa	809	....	8	256	336	209
Wasco	761	....	40	162	559	....
Washington	917	4	259	592	58	4
Wheeler	392	....	7	82	18	285
Yamhill	748	2	100	595	38	13
Totals, county roads	32,566	132	2,774	13,983	6,162	9,515
National forest roads	12,167	12	36	2,645	9,474	....
National park roads	73	....	43	12	12	6
Indian reservation roads	1,098	....	....	106	262	730
State forest roads	745	....	....	160	495	90
State park roads	29	....	17	12	....	....
Military reservation roads	22	3	16	3	....	....
Non-highway city streets	3,645	401	1,423	1,174	640	7
Totals, all roads other than state highways	50,345	548	4,309	18,095	17,045	10,348

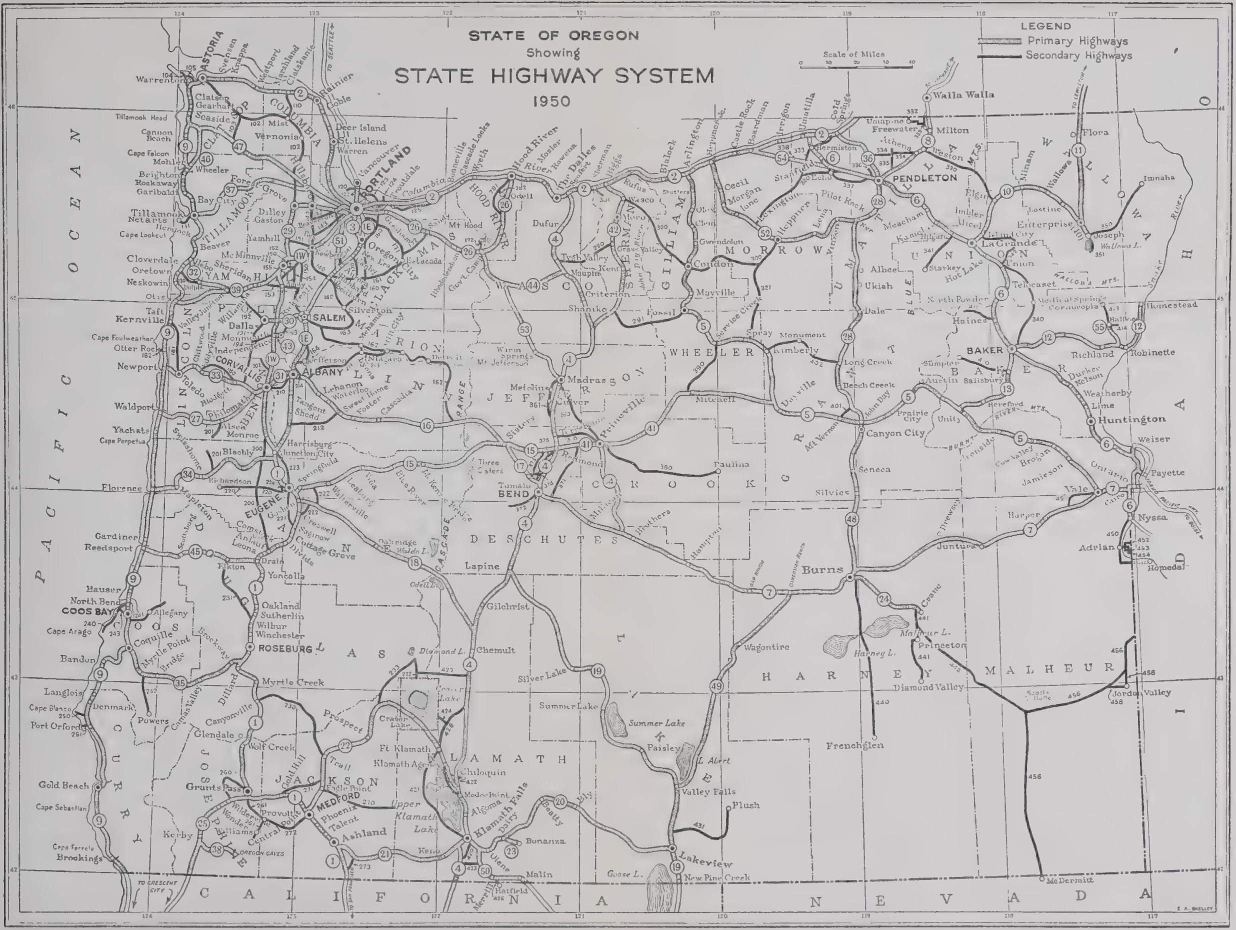
Table No. 34

LIST OF PERSONS RENDERING PROFESSIONAL OR SPECIAL SERVICES

July 1, 1948 to June 30, 1950

Name and Address	Nature of Service	Compensation
Affiliated Brokers, Inc., Portland	Property appraisal	$ 150.00
Ambler, D. B., Newport	Property appraisal	175.00
Anderson, Philo, Baker	Property appraisal	129.80
Barton, J. S., Coquille	Property appraisal	15.00
Bell, P. H., Salem	Property appraisal	10.00
Bevlin, Jack, Coquille	Property appraisal	40.00
Blackaby Agency, Earl, Ontario	Property appraisal	15.00
Braly, J. Fred, Albany	Property appraisal	10.00
Brooke, R. E., Ontario	Property appraisal	15.00
Brown & White, Medford	Property appraisal	15.00
Bryan, T. R., Ontario	Property appraisal	50.00
Campbell, Merle, Portland	Property appraisal	100.00
Canyonville Realty Co., Canyonville	Property appraisal	50.00
Carnefix, J. F., Fruitland, Idaho	Property appraisal	12.50
Caulfield, Raymond P., Oregon City	Property appraisal	25.00
Chilcote, E. M., Klamath Falls	Property appraisal	50.00
Childs, Leo N., Salem	Property appraisal	25.00
Collins, James C., Medford	Property appraisal	5.00
Commonwealth, Inc., Portland	Property appraisal	592.50
Crissey, W. L., Brookings	Property appraisal	25.00
Deal, Tom, Newport	Property appraisal	75.00
Diehl, John C., Reedsport	Property appraisal	15.00
Dimmick, George W., Roseburg	Property appraisal	35.00
Dryer, H. A., Portland	Property appraisal	3,950.00
Duerst, Jacob, McMinnville	Property appraisal	100.00
Frisbie Insurance Agency, Baker	Property appraisal	75.00
Gearin, Ruth, Newberg	Property appraisal	47.50
Gilmore Realty Co., Eugene	Property appraisal	45.00
Gordon, Herbert, Ocean Lake	Property appraisal	350.00
Graham & Co., Wm. L., Delake	Property appraisal	175.00
Greene, W. W., Portland	Property appraisal	35.00
Griffith & Meeke, Hillsboro	Property appraisal	81.60
Harmon Realty Company, Newberg	Property appraisal	195.00
Hart, Spencer, McCulloch, and Rockwood, Portland	Property appraisal	50.00
Hawes, Mark D., Portland	Property appraisal	375.00
Hibbard, W. H., Brookings	Property appraisal	25.00
Hiller Brothers, Portland	Property appraisal	25.00
Hilton, Harvey L., Eugene	Property appraisal	25.00
Hodge Agency, Inc., Pendleton	Property appraisal	35.00
Hodge, Dr. E. T., Corvallis	Geologic survey	104.32
Hodson, J. R., Newport	Property appraisal	25.00
Holbrook & Walstrom, Portland	Property appraisal	5,414.99
Howland, A. C., Oregon City	Property appraisal	25.00
Hutchcroft Agency, McMinnville	Property appraisal	25.00
Hutcheson, W. R., Mill City	Property appraisal	25.00
Hutchison, Joe, Salem	Property appraisal	21.00
Hyde, Clarence, Eugene	Property appraisal	414.61
Ireland, G. A., Ontario	Property appraisal	50.00
Johnson, Mark R., Klamath Falls	Property appraisal	50.00
Jones, Walter H., Medford	Property appraisal	25.00
Killam, Graham, Portland	Property appraisal	25.00
Kuratli, H. A., Hillsboro	Property appraisal	75.00
Laughlin, C. W., St. Helens	Property appraisal	150.00
Lesmeister Agency, Pete J., Brookings	Property appraisal	30.00
Long, Lynn, Corvallis	Property appraisal	50.00
McCaffery, Frank, Redmond	Property appraisal	25.00

Name and Address	Nature of Service	Compensation
McCallister, M. D., Corvallis	Property appraisal	692.51
McGowan, F. C., Portland	Property appraisal	50.00
McReary, Ronald, Corvallis	Professional engineering service	81.00
Meinert, Leslie, Albany	Property appraisal	12.00
Merrill, A. E., Coos Bay	Property appraisal	400.00
Morrison, W. H., Pendleton	Property appraisal	185.00
Murphy, Claude H., Salem	Property appraisal	75.00
Murphy & Kent, Salem	Property appraisal	75.00
Naegli, John, Tillamook	Property appraisal	100.00
National City Bank, New York, N. Y.	Bond handling charge	610.00
Nelson, Roy, Corvallis	Property appraisal	2,626.00
Newell, Roy, Redmond	Property appraisal	25.00
Ohmart & Calaba, Salem	Property appraisal	20.00
Opperman, E. G., Coquille	Property appraisal	15.00
Paine, Charles L., Portland	Property appraisal	155.00
Peck, J. E., The Dalles	Engineering services	786.95
Phillips Realty Co., Ontario	Property appraisal	25.00
Polivka, Dr. J. J., Berkeley, Calif.	Concrete waterproofing process	940.35
Portland Realty Board, Portland	Registration for appraisal course	150.00
Quinn, Henry J. C., Portland	Property appraisal	50.00
Robertson, W. R., Salem	Property appraisal	180.00
Rodman, James A., Jr., Eugene	Property appraisal	380.00
Rodman Realty Co., Eugene	Property appraisal	60.00
Rugh, Loyall R., Eugene	Property appraisal	140.00
Schild, John, Tillamook	Property appraisal	50.00
Schmeck Real Estate, Al., Klamath Falls	Property appraisal	35.00
Schumacher, Ray J., Medford	Property appraisal	25.00
Seage & Tudor, San Francisco	The Dalles toll bridge study	7,333.33
Shelley Real Estate Co., Redmond	Property appraisal	35.00
Shortridge, J. W., Albany	Property appraisal	10.00
Smith, G. H., Coos Bay	Property appraisal	25.00
Southwell, W. W., Klamath Falls	Professional services	5.00
Spears Investigation Bureau, Portland	Investigation services	50.00
St. John, Andrew, Coos Bay	House moving estimates	110.00
Stevens Realty Co., Tillamook	Property appraisal	25.00
Stotts, Claude, Coos Bay	Property appraisal	408.60
Tengwald, Carl Y., Medford	Property appraisal	25.00
Ulrich Co., J. F., Salem	Property appraisal	100.00
Valley Real Estate Agency, Roseburg	Property appraisal	25.00
Watson, Ralph, Portland	Services as Public Relations Consultant	6,400.00
Wendell, G. E., Berkeley, Calif.	Concrete waterproofing process	1,148.85
White, E. D., Ontario	Property appraisal	50.00
Whitehouse, Church, Newberry & Roehr, Portland	Architect services new office building	19,199.17
Whitfield, Stratford & Co., Portland	Study of accounting procedures	6,947.43
Wiley Agency, Earl, Roseburg	Property appraisal	25.00



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